

MATERIALS TOWARD A MONOGRAPH OF THE GENUS LIPPIA. I

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This is the twenty-ninth in my series of works of monographic nature on the genera of Verbenaceae, Avicenniaceae, Stilbaceae, Chloanthaceae, and Sympcoremaceae. Previous genera so treated by me are Acantholippia Griseb., Aegiphila Jacq., Amazonia L. f., Avicennia L., Baillonia Bocq., Bouchea Cham., Casselia Nees & Mart., Castelia Cav., Chascanum E. Mey., Citharexylum B. Juss., Cornutia Plum., Diostea Miers, Dipyrena Hook., Hierobotana Briq., Parodianthus Troncoso, Petitia Jacq., Petrea Houst., Priva Adans., Pseudocarpidium Millsp., Recordia Moldenke, Rehdera Moldenke, Rhaphithamnus Miers, Styloodon Raf., Svensonia Moldenke, Tectona L. f., Verbena [Dorst.] L., Vitex Tourn., and the New World and cultivated members of Callicarpa L.

Full explanation of the abbreviations employed herein for the names of the 276 herbaria whose material, in whole or in part, was examined in the preparation of these works will be found in Phytologia 5: 154-159 (1955), 6: 242 (1958), 7: 91-92 (1959), 7: 123-124 (1960), 7: 343 (1961), 8: 95 (1961), and 9: 191 (1963), with the following additions: Bn = Central College, Bangalore, Mysore, India; Cd = Museo de Córdoba, Córdoba, Argentina; Fj = Fred B. Jones Herbarium, Corpus Christi, Texas; Ij = Science Museum, Institute of Jamaica, Kingston, Jamaica; Lb = University of Missouri, Columbia, Missouri; Sj = University of Puerto Rico, San Juan, Puerto Rico; and Ww = Rob & Bessie Welder Wildlife Federation, Corpus Christi, Texas.

LIPPIA Houst. ex L., Sp. Pl., ed. 1, 633 (1753), Gen. Pl., ed. 5, 282. 1754.

Synonymy: Lippia L. ex A. L. Juss., Gen. Pl., ed. 1, 109. 1789. Lippia Kunth ex Spreng. in L., Syst. Veg., ed. 16, 2: 930. 1825. Dipterocalyx Cham., Linnaea 7: 241. 1832. Zapania Juss. ex Steud., Nom. Bot., ed. 2, 2: 54, in syn. 1841 [not Zapania Lam., 1791, nor Scop., 1806]. Leppia Schau. apud R. A. Phil., Anal. Univ. Chile 90: [Pl. Nuev. Chil.] pl. 1, fig. c-e, sphalm. 1895. Gonostachyum (Schau.) Small, Fl. Southeast. U. S., ed. 1, 1012 & 1337. 1903. Lippia [Houst.] L. ex Robinson & Fern. in A. Gray, New Man. Bot., ed. 7, 189. 1908. Gonostachyum Small ex Cory, Texas Agr. Exp. Sta. Bull. 550: 88, sphalm. 1937. Lippea Hort. ex Moldenke, Suppl. List Invalid Names 5, in syn. 1941. Hippia Bourgeau ex Moldenke, Alph. List Invalid Names Suppl. 1: 10, in syn. 1947. Lippi H.B.K. ex Moldenke, Castanea 13: 116, sphalm. 1948. Lippa L. ex Troncoso, Darwiniana 12: 257, sphalm. 1961.

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Erect bushes, shrubs, undershrubs, or subshrubs, rarely trees, glabrous or variously pubescent with simple hairs, often hirsute or tomentose, sometimes functionally dioecious, in some grassland regions with herbaceous branches issuing from a basal or subterranean woody xylopodium; leaves opposite or ternate, rarely alternate or in 4's, decussate when opposite, simple, deciduous, varying from entire to variously toothed or lobed, exstipulate, petiolate or sessile, flat or rugose above, varying from thin-membranous to heavy-coriaceous, mostly penninerved; inflorescence indeterminate, centripetal, spicate or capitate, solitary or fascicled in the leaf-axils or aggregate in terminal corymbs or panicles, the spikes mostly contracted into heads or cylindric, not usually conspicuously elongating in fruit, very dense-flowered, conspicuously bracteate; bractlets not caducous, decussate or many-ranked, herbaceous, often folded, sometimes concave or flat, imbricate, sometimes forming an involucre, mostly rather large and ovate or lanceolate, often decreasing in size toward the apex of the spike; flowers small, sessile, often dimorphic, borne singly in the axils of the bractlets, often more or less 4-ranked, in some species staminate plants have flowers with well-developed anthers and aborted or non-functional pistil, while pistillate plants have flowers with no stamens or only occasionally 1 or 2 aborted ones; calyx small, membranous, gamosepalous, inferior, ovoid-campanulate or compressed and often 2-carinate or 2-alate, sometimes 2-lipped, its rim 2- or 4-fid or 4-dentate; corolla white or variously colored, hypocrateriform or infundibular, gamopetalous, inferior, zygomorphic, its tube cylindric, straight or incurved, very slender, slightly exserted from the calyx or rarely elongate, equal in di-

ameter throughout or ampliate above, its limb oblique, usually spreading, somewhat 2-lipped, 4-parted, the lobes broad, often retuse at the apex, the posterior one entire, emarginate, or even bifid to about the middle, the lateral ones exterior, the anterior one often larger; stamens 4, didynamous, inserted at about the middle of the corolla-tube, included or slightly exserted, sometimes only 1 or 2 present or completely absent on pistillate plants; anthers ovate, unappendaged, the thecae parallel, often aborted or even absent on pistillate plants; pistil one, often aborted or non-functional on staminate plants; ovary superior, globose, compound, 2-celled, each cell 1-ovulate; style single, often short; stigma single, rather incrassate or capitate, oblique or recurved; ovules basal and erect or affixed laterally near the base; fruit small, dry, ovoid, included by the fruiting-calyx and sometimes adnate to it, dividing into 2 pyrenes or nutlets at maturity, the pericarp papery and hard, the exocarp membranous and rarely distinct from the pyrenes; seeds without endosperm; cotyledons 2.

Riley (1963) gives the sporophytic chromosome number for Lippia as 32 and 36, but he includes the genus Phyla in his concept of Lippia, so it is not clear which of these numbers actually applies to Lippia.

Troncoso (1961) reports that in various species of the Section Euzapania (which she calls Section Lippia) "there exist feminine individuals whose flowers lack stamens, but which nevertheless develop fruits and seeds. These plants evidently receive pollen from other individuals or are apomictic. Individuals with apparently hermaphroditic flowers, on the contrary, never fruit and their flowers fall very quickly. From the large number of specimens with this character it is deduced that these plants are functionally masculine. With the discovery of dioecism in a group of species of Lippia, it was necessary to look for specimens of the other sex and this was done in a number of cases. The two types of flowers were never found in the same inflorescence nor on the same plant. Certain kinds of heteromorphism formerly not understood and attributed to varietal difference or as related species, can now be interpreted as secondary sexual differences."

She says "El género Lippia.....siempre ha sido considerado de flores hermafroditas. En realidad la mayoría de las especies lo son, pero en el Subgénero Lippia, Secc. Lippia.....he descubierto un grupo francamente dioico, aunque a primera vista no lo aparenta. Las flores funcionalmente masculinas conservan un gineceo abortivo, pero en cambio las flores femeninas carecen totalmente de estambres y estaminodios, sólo muy excepcionalmente he observado 1 o 2 estambres abortados. Esta caso de aparente ginodioecia y real dioecia en Lippia es la inversa de lo hallado en el género andino de Malváceas Nototrichie, donde Krapovickas (1957) habla de 'androdioecia morfológica' pero 'dioecia funcional'." She further describes the two types of plants, as observed by her, as follows: "I. Plantas femeninas.....Capítulos más pequeños. Flores por lo general sin rastros de estambres o estam-

inodios, muy rara vez 1 ó 2 estambres abortados. Corola más reducida. Tubo corolar angosto, cilíndrico. Cáliz bien desarrollado, conspicuo, acrecente en el fruto. Corola persistente, aún en el fruto en desarrollo. Gineceo normal; estílo largo, casi hasta la garganta del tubo corolar. Fructificación normal. II. Plantas masculinas.....Capítulos mayores. Flores con 4 estambres didinamos, muy rara vez con 1 ó 2 estambres abortados, Corola mayor. Tubo corolar infundibuliforme, ensanchado en el lugar de inserción de las anteras. Cáliz ausente o si presente, inconspicuo, reducido a dos pequeñas escamitas membranosas. Flores pronto caducas. Gineceo presente, aparentemente normal aunque algo menor; estílo poco más breve, generalmente por debajo de la inserción de los estambres inferiores. Fructificación nula."

It should be noted here that the entire discussion by Junell (1934) of the gynoecium morphology of Lippia is based on species which are now excluded from the genus (Aloysia, Diostea, and Phyla) and is therefore valueless here. The genus is mentioned by Rosengurtt Gurvich (1941) as one of the genera in Uruguay with most numerous "hierbas hemicriptofitas leñosas".

Lippia is a genus of about 252 species, varieties, and named forms, widely distributed in subtropical and tropical America, a few also in tropical portions of the Old World. The genera Acantholippia Griseb. (5 species), Aloysia Ortega (51 species and varieties), Burroughsia Moldenke (2 species), Nashia Millsp. (7 species), Phyla Lour. (20 species, varieties, and forms), and a portion of Diostea Miers (3 species) are often included in Lippia, but are kept separate by me. Cryptocalyx Benth., Zapania Lam., and Zapania Scop., as well as Zappania Scop. and Zappania Zuccagni, are also sometimes included in the synonymy of Lippia, but belong more properly in that of Phyla Lour. and Priva Adans.

The genus is named in honor of and is dedicated to Auguste Lippi (1678-1704), an Italian explorer and naturalist in Abyssinia, where he was murdered at the age of 26 by natives. Soukup (1963) refers to him as a French physician and botanist and gives his first name as "Augustín", while Acuña (1945) also speaks of him as "médico y botánico francés" and spells his given name "Augusto". Alvarez (1919) writes the generic name with a lowercase initial letter in many instances!

The type of the genus is Lippia americana L., based on specimen no. 1 under genus 801 in the Linnean Herbarium at London.

It is of interest to note that Bentham (1876) regarded the genus, in its broad sense, as containing 90 species, Baker (1877) eighty, but later (1900) says "about 60", and Pearson (1901) says "about 110".

The genus was placed by Westmann (1744) in his group Alatae, by Linnaeus (1753, 1754) in his Didynamia Angiosperma and later in his Stellata, by Adanson (1763) in his Verbeneae, and by Rüding (1774) in his Lonicerae. In 1789 A. L. Jussieu classified it in what he called the Vitices, section II "Flores spicati, in spicis

alterni", along with Petrea Houst., Citharexylum B. Juss., Duranta L., Lantana L., Taligalea Aubl. [now known as Amazonia L. f.], Tamonea Aubl. [=Ghinia Schreb.], Verbena [Dorst.] L., and the non-verbenaceous genera Spielmannia Medic. [=Oftia Adans., in the Myoporaceae] and Perama Aubl. [in the Rubiaceae]. In 1806 the same authority placed Lippia in "les Verbénacées".

In 1790 it was placed by Necker in his Plasyrgophytum ["Plasyrgophyta" according to Steudel, 1841], along with Amazonia, Citharexylum, Duranta, Lantana, Petrea, Clerodendrum Burm., Diphystema Neck. [=Amazonia], Ovieda L. [=Clerodendrum], Premna L., and Volkameria L. [=Clerodendrum], as well as the non-verbenaceous Spielmannia [=Oftia, Myoporaceae], Selago L. [in the Selaginaceae], and 35 other genera, of which 12 are now placed in the Scrophulariaceae, 5 in the Acanthaceae, 3 each in the Pedaliaceae, Solanaceae, and Bignoniaceae, 2 each in the Gentianaceae and Gesneriaceae, and 1 each in the Caprifoliaceae, Martyniaceae, Loganiaceae, Orobanchaceae, and Polemoniaceae.

In 1805 J. H. Jaume Saint-Hilaire first proposed the name which we now employ for the family, Verbenaceae, and placed Lippia in his Section 2 "Fleurs disposées en épis alternes" along with Citharexylum, Duranta, Lantana, Petrea, Taligalea, Tamonea, Verbena, Zapania Juss., and the non-verbenaceous Perama and Spielmannia. Sprengel (1825) placed Lippia in the Section Verbeneae and Endlicher (1838) in the Tribe Lippieae of this family. Reichenbach, however, classified (1827, 1828, 1833) Lippia in his Section Verbeneae of the family Labiatae!

Schauer (1847, 1851) divides the genus Lippia into 5 sections and 3 subsections, as follows:

Section 1. Aloysia. Racemi vel spicae laxae. Calyx inaequaliter 4-fidus.

Section 2. Goniolippia. Capitula densa tetraqueta, pedunculata, gemina--plurima axillaria.

Section 3. Dipterocalyx. Capitula densa plurifarum imbricata, saepius squarrosa. Calyx compressus, bicarinatus vel bialatus, longe ciliatus, breviter bifidus.

Section 4. Zapania. Capitula densa plurifarum imbricata.

Bracteae neque magnae neque post anthesin auctae. Calyx brevitubulosus membranaceus.

Subsection 1. Axilliflora. Capitula axillaria.

Subsection 2. Paniculata. Capitula densa terminali-paniculata.

Subsection 3. Corymbosae. Capitula adulta subspicata vel subracemosa, laxa, corymboso-paniculata.

Section 5. Rhodolippia. Capitula magna, subglobosa, aequaliter imbricata. Bracteae membranaceae, latae, petaloideae, purpurascentes, post anthesin demum conspicue auctis.

Bentham (1876) says "Genus a Schauero in sectiones 5 imprimis ad inflorescentiam dividitur, dein ad variationes calycis et fructus pyrenas facile v. difficile solvendas, qui tamen characteres valde incerti. Inflorescentia sola series 2 praebet facile distinguendas, etsi characteres florales fere eidem." He divides Lippia into just 2 sections: Aloysia, with "spicis elongatis gracilibus laxis, bracteis parvis angustis, calycibus in plerisque dense hirsutis", and Zapania, with "spicis densis cylindraceis v. globosis, bracteis latis obtusis v. brevissime cuspidatis rarius acutiusculis nunc herbaceis imbricatis, nunc coloratis laxioribus exterioribus amplis". Of Acantholippia Griseb. he says "Acantholippia.....ab auctore a Lippia distinguitur seminibus albuminosis. A. salsoloidem Griseb., e Catamarca, non vidimus, sed planta habitum, folia alterna minima 3—5-fida aliisque notas plurimas cum descriptione conveniens lecta a Pearceo ad Jeyring in prov. Salta, semina tamen in specimine nostro nondum perfecte matura. Albumen parvum verisimiliter adest in speciebus pluribus Lippiae, et Acantholippia facile pro sectione Lippiae habenda, calycibus dense hirsutis floribusque Aloysiae, sed habitu fruticuloso saepe spinescente, foliis parvis oppositis v. alternis saepius lobatis et marginibus valde recurvis subtus quasi canaliculatis, spicis saepius brevibus densis. Species adsunt 3 v. 4, omnes ex America australi extratropica." Of Riedelia Cham. he says "Riedelia.....a Schauero inter Lippias (Zapanias) admissa, fructu nigro nitidissimo sponte non secedente, inter Lippiam et Lantanam fere medium tenet, his habitu bracteisque acuminatis similior. Genera duo caeterum limitibus certis vix distincta."

Briquet (1894) divides the genus Lippia into 10 groups, characterized as follows:

Subgenus 1. Aloysia (Ort.) Schau. Verlängerte Trauben oder Ähren, terminal, axillär oder in Rispen gruppiert. Blumen oft in Scheinquirlen zusammengesogen. Bracteen klein, oft abfallig. Kelch fast gleich 4-spaltig. Ausschliesslich südamerikanische Arten.

Subgenus 2. Zapania (Scop.) Benth. Kurtze, gewöhnlich zu Köpfchen gedrängte Ähren mit breiten, nicht abfalligen Bracteen.

Section 1. Goniostachyum Schau. [not "Gonostachyum" as written by Briquet (1894) and by Augusto (1946)]. Köpfchen etwas zählig, sich wenig verlängernd, mit decussierten, gefalteten, dachziegelig sich deckenden Bracteen, axillär, gestielt. Blumen sehr klein. Kelch unbeflügelt. Zahlreiche südamerikanische, besonders brasiliatische Sträucher.

Section 2. Acantholippia (Griseb.) Briq. Köpfchen etwas zählig, sich wenig verlängernd, mit dachziegelig sich deckenden Bracteen. Kelch unbeflügelt. Kleine, dornige Sträucher mit kleinen, rückwärts gebogenen Blätter.

Section 3. Dipterocalyx (Cham.) Schau. Köpfchen klein, mit mehreren Reihen dachziegelig sich deckenden Bracteen, axillär, oft mit den reduzierten Blätter eine art Rispe bildend. Kelch zusammengedrückt, beiderseits mit einem schmalen, be-

haarten Flügel versehen, kurz 2-teilig. Frucht im Kelch eingeschlossen. Tropisch-amerikanische Straucher.

Section 4. Euzapania Briq. Köpfchen mit mehreren Reihen dachziegelig sich deckenden Bracteen, während der Blützeit sich ± verlängernd. Bracteen concav oder flach, den Kelch deckend. Kelch kurz röhlig, hin und wieder zusammengedrückt, aber nicht flügelig.

Subsection 1. Axilliflorae (Schau.) Briq. [not "Axilliflorae" as written by Augusto (1946)]. Köpfchen axillär, ± gestielt. Zahlreiche tropisch-amerikanische Arten von sehr verschiedenem Aussehen.

Subsection 2. Paniculatae (Schau.) Briq. Köpfchen halbkugelig, mit sehr gedrängten Blumen, gestielt, einen ± rispigen oder cymös-rispigen, terminalen Blütenstand bildend. 8--9 brasilianische Arten.

Subsection 3. Corymbosae (Schau.) Briq. Ausgebildete Köpfchen zährenförmig verlängert, in rispigen Dolden gruppiert. 6--7 brasilianische Arten.

Section 5. Rhodolippia (Schau.) Briq. Köpfchen zu Anfang der Blützeit halbkugelig, mit gleichen, dachziegelig sich deckenden Bracteen, mit einem Involucrum versehen. Bracteen des Involucrums breit, membranartig, blass, lila oder rosafarbig, nach der Blützeit stark wachsend, endlich sehr gross, netzaderig.

Subsection 4. Köpfchenstiele zu mehreren in den Blattachseln. Mexikanische Arten.

Subsection 5. Köpfchenstiele einzeln oder zu 2 in den Blattachseln. Südamerikanische Straucher mit prächtig lila- oder rosafarbig ausgebildeten Bracteen des Involucrum.

Of these groups, his Subgenus 1, Aloysia, is now regarded as a separate genus, Aloysia Ortega; his Section 2, Acantholippia, is now, in greater part, the separate genus Acantholippia Griseb.; and his Subsection 1, Axilliflorae, is now, in its herbaceous or subherbaceous part, the separate genus Phyla Lour. With the removal of the species belonging to these segregated genera, there remain the following of the "classic" species in his groups:

Section 1. Goniostachyum — L. affinis Schau., L. berlandieri

Schau. [=L. graveolens], L. glandulosa Schau., L. gracilis Schau., L. grata Schau., L. graveolens H.B.K., L. macrophylla Cham. [=Lantana macrophylla (Cham.) Schau.], L. martiana Schau., L. nepetacea Schau., L. origanoides H.B.K., L. pohliana Schau., L. rigida Schau., L. rubiginosa Schau., L. salviaeefolia Cham., L. schomburgkiana Schau., L. sericea Cham., L. sidoides Cham., L. stachyoides Cham., L. velutina Schau.

Section 2. Spinulosae Moldenke, nom. nov. Foliis spinulis armatis. — L. salsa Griseb.

Section 3. Dipterocalyx — L. adoensis Hochst. [=L. abyssinica (Otto & Dietr.) Cuf.], L. americana L., L. hemisphaerica Jacq. [=L. americana], L. hirsuta L. f., L. hirta (Cham.) Schau.,

L. myriocephala Schlecht. & Cham.

Section 4. Euzapania

Subsection 1. Axilliflorae — L. alnifolia Schau., L. argyrophylla Schau. [=Lantana aristata (Schau.) Briq.], L. aristata Schau. [=Lantana aristata (Schau.) Briq.], L. asperrima Cham., L. asperifolia L. C. Rich. [=L. javanica (Burm. f.) Spreng.], L. bicolor Mart. & Schau. [=L. bellatula Moldenke], L. ferruginea H.B.K., L. filifolia Mart. & Schau., L. geminata H.B.K. [=L. alba (Mill.) N. E. Br.], L. hermannioides Cham. [=L. microcephala], L. iodophylla Schau., L. linearis H.B.K., L. microcephala Cham., L. micromera Schau., L. nana Schau., L. pseudo-thea (A. St.-Hil.) Schau., L. pumila Cham., L. riedeliana Schau., L. satureiaefolia Mart. & Schau., L. thymoides Mart. & Schau., L. turnerifolia Cham.

Subsection 2. Paniculatae — L. angustifolia Cham., L. herbacea Mart., L. hieracifolia Cham., L. intermedia Cham., L. oxycnemis Schau., L. vernonioides Cham.

Subsection 3. Corymbosae — L. acutidens Mart. & Schau., L. corymbosa Cham., L. grandiflora Mart., L. lacunosa Mart. & Schau., L. lasiocalyxina Cham., L. rotundifolia Cham., L. schaueriana Mart.

Section 5. Rhodolippi

Subsection 4. Mexicanae Moldenke, nom. nov. Pedunculis in axillis foliorum numerosis — L. callicarpaefolia H.B.K., L. umbellata Cav.

Subsection 5. Brasilianae Moldenke, nom. nov. Pedunculis in axillis foliorum solitariis vel binis — L. elliptica Schau., L. eupatorium Schau., L. florida Cham., L. gardneriana Schau., L. hederaefolia Mart. & Schau., L. lupulina Cham., L. rhodocnemis Mart. & Schau.

Troncoso (1961) adds to Section Goniostachyum, L. obscura Briq.; to Section Dipterocalyx, L. hassleriana Chod., L. sclerophylla Briq.; to Section Euzapania [which she calls Sect. Lippia], Subsection Axilliflorae [which she calls "Series"], L. aberrans (Briq.) Troncoso [=L. tristis var. aberrans Briq.], L. balansae Briq., L. contermina Briq., L. coriacea Briq., L. longepedunculata Kuntze, L. modesta Briq., L. phaeocephala Briq., L. polytricha Briq., L. tegulifera Briq., L. trachyphylla Briq., L. tristis Briq.; to Subsection Paniculatae [which she calls "Series"], L. scaposa Briq. She adds a new Section 6. Pseudaloysia Troncoso. Frutices, spicis brevibus laxis, pedunculatis, axillaribus, insertione saepe a petiolo distanti (supra-axillari), bracteis lanceolatis, pro rata magnis, coloratis, floribus breviter pedicellatis, calyce hirto, bilabiato-bifido, 4-dentato. — L. phryxocalyx Briq.

It should be mentioned here that some of the references given in

the bibliography of this genus on previous pages are cited differently (and sometimes incorrectly) in other works on the genus. Among these may be mentioned the following: J. G. Baker, Journ. Linn. Soc. Lond. Bot. 20: 225. 1883 [often cited as "1884"]; Blume, Bijdr. 14: 821--822. 1826 [often cited as "Blume, Bijdr. 811"]; Cham., Linnaea 7: 275 [this is apparently an error or some sort since there is no mention of Lippia on that page]; Coult., Contrib. U. S. Nat. Herb. 2: 328--329. 1892 [often cited as "1891" or as "1894"]; Delchev., Rev. Hortic. 44: 316--317. 1872 [often cited to "Carr." as author, but the article is definitely signed by Delchevalerie, not Carrière]; Desv., Journ. Bot. 4: 177 [apparently an error of some sort, since there is no mention of Lippia on that page]; Emory, Rep. U. S. & Mex. Bound. Surv. 2: 126--127. 1858 [often cited as "Torr., Bot. Mex. Bound. 127, 1859"]; Hook., Bot. Misc. 1: 171--173. 1829 [sometimes cited as "Bot. Misc. 1: 162. 1830"]; F. Krauss, Flora 28: 68. 1845 [often cited as "Hochst., Flora"]; Lam., Tabl. Encycl. Méth. Bot. 3: pl. 539 [sometimes cited as "Lam., Illustr. 1: 90, pl. 529"]; L'Hér., Stirp. Nov. 1: 21--24, pl. 12. 1786 [sometimes cited as "1784"]; Marthe, Cat. Pl. Jard. Méd. Paris 67 [often cited as "Rich., Cat. Hort. Med. Paris"]; Mart., Fl. Bras. 9: 219--252 & 307, pl. 36--41. 1851 [sometimes cited as "Mart., Fl. Bras. 10: 219"]; Moldenke, Holmbergia 4: 149--150. 1945 [sometimes erroneously cited as "1944"]; Moldenke, Phytologia 2: 65--125. 1945 [often erroneously cited as "1944"]; Morong, Britton, & Vail, Ann. N. Y. Acad. Sci. 7: 196--197. 1892 [sometimes cited as "Morong, N. Y. Acad. 7: 196. 1893"]; R. A. Phil., Anal. Univ. Chile 90: 618--624. 1895 [often cited as "1896"] and 91: 415--416. 1896 [often cited as "1895"]; Pluk., Almag. Bot. 382, pl. 232, fig. 4. 1696 [sometimes cited as "2: 382"]; Reichenb., Icon. Bot. Exot. pl. 169. 1830 [sometimes cited as "Reichenb., Hort. Bot. 1828"]; Sagra, Hist. Fis. Cuba 11: 140. 1850 [often cited as "Sagra, Fl. Cub."]; Thiselt.-Dyer, Fl. Cap. 5 (1): 189--197. 1901 [sometimes cited as "1910" or "1912"]; Walp., Nov. Act. Acad. Caes. Leopold.-Carol. Nat. Cur. 19: suppl. 1: 377. 1843 [sometimes cited as "17, 1: 377"]; J. K. Small, Fl. Southeast. U. S., ed. 1, 1012 (1903) and ed. 2, 1012. 1913 [sometimes cited as "1014"].

Zohary (1962) describes an ecologic association in Palestine called the Lippieto-Trifolietum fragiferi association, but it is Phyla nodiflora (L.) Greene to which he refers here.

Quite a few vernacular or common names have been recorded by authors in the past for the genus as a whole. Mostly, however, they refer only to species native or cultivated in the area with which the particular writer is acquainted; sometimes they refer to an unidentified plant thought by the writer to be a member of this genus; often they refer to species now placed in segregated genera. Necker (1790) records "lippée"; Gerth van Wijk (1911, 1916) records "lippi", "lippia", "lippie", and "Zitronenlippe"; Reko (1945) lists "guia huace", "orégano montés", and "quie huace"; Westcott (1950) lists "fog-fruit" and "lemon-verbena"; Lombardo (1954) records "salvia trepadora"; and Soukup (1962, 1963, 1964)

lists "aimara", "cedroncillo", "cedro pashaco", "chichara caspi", "cidra", "huari pancara", "micho caspi", "micho-caspi", "orégano", "pampa orégano", and "sideraea". Eyles and others record "zezuru", "zimbaní", and "zumbani" from Rhodesia. Actually, the name fog-fruit applies only to the genus Phyla Lour., not to Lippia, while "Zitronenlippe" applies to Aloysia triphylla (L'Hér.) Britton. The name "cariquito negro" recorded for Lippia by Ll. Williams on his collection no. 12877 actually belongs to Varronia globosa Jacq., while the "escoba negra" recorded by Hjalmarson belongs to Cordia cana Mart. & Gal., both members of the Ehretiaceae.

Razi (1950) avers that dissemination of members of the genus Lippia is endozoic. Seymour (1929) lists Meliola cookeana Speg. and M. lippiae Maubel. as infesting an unidentified species of Lippia. Houard (1933) calls attention to the fact that Lippia species are infested with insect galls in Argentina (he probably refers here to L. turbinata Griseb.). Westcott (1950) records the following animal and fungal pests of Lippia: Spot Anthracnose (Sphaceloma lippiae) in Indiana; Black Mildew (Meliola lippiae) in Florida [both of these probably are pests of Phyla, not Lippia]; Southern Blight (Sclerotium rolfsii) in California [this is on Aloysia triphylla, not Lippia!]; Leaf Spot (Cercospora lippiae, widespread; Cylindrosporium lippiae in Texas); Root Knot Nematode (Heterodera marioni); and Root Rot (Phymatotrichum omnivorum) in Texas.

Members of the genus are said to be used as a tea and as a scent in Rhodesia, also to drive away fleas and to use as a corpse deodorizer. Calpouzos (1954) comments on the fragrant tea herb, oregano: "Oregano is becoming a popular herb in America. The botanical identity of the plants sold as oregano in the United States has been in doubt. Most of the plants belong in the genus Lippia, of the family Verbenaceae, and come from Mexico. The rest of our supply of this herb comes from Europe. These latter plants belong to the genus Origamum of the family Labiatae. Species in other genera are also called 'oregano', or some variation of this name [for a complete list of which, see under L. affinis in these notes], in many parts of the world. The term 'oregano' should not be used to refer only to a single plant species but rather to a number of species, all having in common a particular herb flavor."

Le Cointe (1934, 1947) speaks of a Lippia commonly cultivated in São Paulo, Brazil -- this is probably L. alba (Mill.) N. E. Br. The "Lippia sp." of Stellfeld (1951) is actually two very distinct species -- the Dusén 14929 to which he refers is L. obscura Briq., while the Jönsson 35a is L. turnerifolia Cham. An unidentified species is also listed by Miranda (1953, page 363) from Chiapas, Mexico, another by Alain (1946) from Cuba, and another by Seckt (1930) from Córdoba, Argentina. I have not as yet seen the specimens (as far as I am aware, at least) referred to by these authors.

Material has been identified by various botanical workers as Lippia in the past which actually belongs in such other verbena-ceous genera as Acantholippia, Aloysia, Burroughsia, Citharexylum, Diostea, Junellia, Lantana, Nashia, Neosparton, Phyla, Stachytarpheta, and Verbena, and even in such non-verbena-ceous genera as Acrocephalus (Lamiaceae), Avicennia (Avicenniaceae), Buddleia (Loganiaceae), Machaonia (Rubiaceae), Microdon (Selaginaceae), Rhaphiodon (Lamiaceae), and Valeriana (Valerianaceae).

The Baron 953, Hildebrandt 4040, and United States National Herbarium 808297, distributed as Lippia, are actually Acrocephalus villosus Benth. (Lamiaceae), of which the first-mentioned is the type collection; Galeotti 795b is Batis maritima L. (Batidaceae); M. E. Jones 370 is Borreria podocephala Benth. (Rubiaceae); M. E. Jones 366 is Buddleia marrubiifolia Benth. (Loganiaceae); Bernardi s.n. and Linden 1214 are Cordia sp. (Ehretiaceae); Hjalmarson s.n. [Honduras] is Cordia cana Mart. & Gal.; Munz 1585 is Eryngium prostratum Nutt. (Ammiaceae); Glaziou 21901 is Hyptis longipes St.-Hil. (Lamiaceae), Hassler 11062 is Hyptis sp. aff. H. lutescens Pohl, Hjalmarson s.n. [Honduras] is H. urticoides Kunth, and Pittier 14945 is Hyptis sp.; Jørgensen 2479 is Lantana glutinosa Poepp.; Swartz s.n. [Jamaica] is the type collection of Machaonia cymosa (Sw.) Griseb. (Rubiaceae); M. E. Jones 363 & 364 are Varronia cana Mart. & Gal. (Ehretiaceae); and Ll. Williams 12877 is Varronia globosa Jacq.

A list of species and of names proposed in this genus, but now excluded therefrom, follows:

Goniostachyum citrosum Small = Lantana microcephala A. Rich.
Lippea hirsuta var. purpurea Hort. = Lantana scabiosaeiflora H.B.K.
Lippea juncea Gay = Diostea juncea (Gill. & Hook.) Miers
Lippea lycioides (Cham.) Steud. = Aloysia gratissima (Gill. & Hook.) Troncoso
Lippia achyranthifolia Desf. = Lantana achyranthifolia Desf.
Lippia aculeata L. = Phyla betulaefolia (H.B.K.) Greene
Lippia aegyptiaca Carr. = Phyla nodiflora var. reptans (H.B.K.)
Moldenke
Lippia aegyptiaca Delchev. = Phyla nodiflora var. reptans (H.B.K.)
Moldenke
Lippia affinis Briq. = Aloysia sellowii (Briq.) Moldenke
Lippia aloysioides Loes. = Aloysia aloysioides Loes. & Moldenke
Lippia aphylla R. A. Phil. = Diostea scoparia (Gill. & Hook.)
Miers
Lippia appendiculata Robinson & Greenm. = Burroughsia appendiculata (Robinson & Greenm.) Moldenke
Lippia arguta Mart. = Lantana aristata (Schau.) Briq.
Lippia argyrophylla Schau. = Lantana aristata (Schau.) Briq.

Lippia aristata Schau. = Lantana aristata (Schau.) Briq.
Lippia aristata f. pluripedunculata Kuntze = Lantana aristata var.
angustifolia (Kuntze) Moldenke
Lippia aristata var. angustifolia Kuntze = Lantana aristata var.
angustifolia (Kuntze) Moldenke
Lippia aristata var. pluripedunculata Kuntze = Lantana aristata
var. angustifolia (Kuntze) Moldenke
Lippia armata Urb. = Nashia armata (Urb.) Moldenke
Lippia aspenifolia Mettam = Lantana scabrifolia Moldenke
Lippia asperifolia Benth. = Phyla scaberrima (A. L. Juss.) Moldenke
Lippia asperifolia Reichenb. = Phyla scaberrima (A. L. Juss.) Mol-
denke
Lippia barbata T. S. Brandeg. = Aloysia barbata (T. S. Brandeg.)
Moldenke
Lippia betulaefolia Humb. & Bonpl. = Phyla betulaefolia (H.B.K.)
Greene
Lippia betulaefolia Humb. & Kunth = Phyla betulaefolia (H.B.K.)
Greene
Lippia betulaefolia H.B.K. = Phyla betulaefolia (H.B.K.) Greene
Lippia betulaefolia Kunth = Phyla betulaefolia (H.B.K.) Greene
Lippia betulifolia H.B.K. = Phyla betulaefolia (H.B.K.) Greene
Lippia betulifolia Kunth = Phyla betulaefolia (H.B.K.) Greene
Lippia caespitosa Rusby = Phyla caespitosa (Rusby) Moldenke
Lippia canescens Humb. = Phyla nodiflora var. canescens (H.B.K.)
Moldenke
Lippia canescens Humb. & Bonpl. = Phyla nodiflora var. canescens
(H.B.K.) Moldenke
Lippia canescens Humb. & Kunth = Phyla nodiflora var. canescens
(H.B.K.) Moldenke
Lippia canescens H.B.K. = Phyla nodiflora var. canescens (H.B.K.)
Moldenke
Lippia canescens Kunth = Phyla nodiflora var. canescens (H.B.K.)
Moldenke
Lippia canescens Rich. = Phyla nodiflora var. reptans (H.B.K.)
Moldenke
Lippia canescens Robinson = Phyla nodiflora var. reptans (H.B.K.)
Moldenke
Lippia capitulis ovatis, foliis linearibus integerrimis L. =
Microdon ovatus (L.) Choisy, Selaginaceae
Lippia cayensis Urb. = Nashia cayensis Britton
Lippia chamaedrifolia Steud. = Aloysia chamaedryfolia Cham.
Lippia chamaedrifolia Steud. = Aloysia chamaedryfolia Cham.
Lippia chamaedrioides Steud. = Aloysia chamaedryfolia Cham.
Lippia chamaedryfolia L. = Aloysia chamaedryfolia Cham.
Lippia chamaedrioides Steud. = Aloysia chamaedryfolia Cham.
Lippia chamissonis Benth. & Hook. = Lantana chamissonis (D. Dietr.)

Benth.

Lippia chamissonis D. Dietr. = Lantana chamissonis (D. Dietr.)
Benth.

Lippia chamissonis Schau. = Lantana chamissonis (D. Dietr.) Benth.

Lippia chamssonis D. Dietr. = Lantana chamissonis (D. Dietr.)
Benth.

Lippia chilensis Schau. = Aloysia salviaefolia (Hook. & Arn.)
Moldenke

Lippia cylindrica Scheele = Stachytarpheta cayennensis (L. C.
Rich.) Vahl

Lippia citrata Schlecht. = Aloysia triphylla (L'Hér.) Britton

Lippia citriodora Humb. & Kunth = Aloysia triphylla (L'Hér.)
Britton

Lippia citriodora H.B.K. = Aloysia triphylla (L'Hér.) Britton

Lippia citriodora Kunth = Aloysia triphylla (L'Hér.) Britton

Lippia citriodora (Lam.) H.B.K. = Aloysia triphylla (L'Hér.)
Britton

Lippia citriodora (Lam.) Kunth = Aloysia triphylla (L'Hér.)
Britton

Lippia citrodora H.B.K. = Aloysia triphylla (L'Hér.) Britton

Lippia citrodora Kunth = Aloysia triphylla (L'Hér.) Britton

Lippia citroidora H.B.K. = Aloysia triphylla (L'Hér.) Britton

Lippia cujabensis Mart. = Lantana brasiliensis Link

Lippia cuneafolia (Torr.) Steud. = Phyla cuneifolia (Torr.)
Greene

Lippia cuneifolia Torr. = Phyla cuneifolia (Torr.) Greene

Lippia cuneifolia Steud. = Phyla cuneifolia (Torr.) Greene

Lippia cuneifolia Torr. = Phyla cuneifolia (Torr.) Greene

Lippia cuneifolia (Torr.) Greene = Phyla cuneifolia (Torr.)
Greene

Lippia cuneifolia (Torr.) Steud. = Phyla cuneifolia (Torr.)
Greene

Lippia cuneifolia Torr. & Steud. = Phyla cuneifolia (Torr.)
Greene

Lippia cuneifolia Zipp. = Phyla nodiflora (L.) Greene

Lippia cuneifolia var. angustissima Gr. = Phyla cuneifolia
(Torr.) Greene

Lippia cuneifolia var. incisa (Small) Blankinship = Phyla incisa
Small

Lippia cuneifolia var. incisa (Small) Lindheimer = Phyla incisa
Small

Lippia cylindrica Scheele = Stachytarpheta cayennensis (L. C.
Rich.) Vahl

Lippia cymosa Sw. = Machaonia cymosa (Sw.) Griseb., Rubiaceae

Lippia darwinii Speg. = Neosparton darwinii Benth.

Lippia densispicata Kunth & Bouché, Ind. Sem. Hort. Berol. 12.

1847 = Aloysia densispicata (Kunth & Bouché) Moldenke, comb.

nov.

Lippia deserticola F. Phil. = Acantholippia deserticola (F. Phil.)
Moldenke

Lippia deserticola R. A. Phil. = Acantholippia deserticola (F. Phil.) Moldenke

Lippia dinteri Moldenke = Lantana dinteri Moldenke

Lippia dulcis Sessé & Moc. = Phyla scaberrima (A. L. Juss.) Moldenke

Lippia dulcis Trev. = Phyla scaberrima (A. L. Juss.) Moldenke

Lippia dulcis var. mexicana Wehmer = Phyla scaberrima (A. L. Juss.) Moldenke

Lippia echinus Spreng. = Rhaphiodon echinus (Spreng.) Schau., Lamiaceae

Lippia fastigiata T. S. Brandeg. = Burroughsia fastigiata (T. S. Brandeg.) Moldenke

Lippia fiebrigii Hayek = Aloysia fiebrigii (Hayek) Moldenke

Lippia filiformis Schau. = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia filiformis Schrad. = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia fimbriata Rusby = Lantana achyranthifolia Desf.

Lippia floribunda Hort. = Lantana achyranthifolia Desf.

Lippia floribunda R. A. Phil. = Aloysia reichii Moldenke

Lippia foliolosa R. A. Phil. = Acantholippia seriphiooides (A. Gray) Moldenke

Lippia foliosa Phil. = Acantholippia seriphiooides (A. Gray) Moldenke

Lippia foncki R. A. Phil. = Aloysia foncki (R. A. Phil.) Moldenke

Lippia geminata Millsp. = Lantana microcephala A. Rich.

Lippia geminata var. lockhartii Griseb. = Lantana lockhartii (Griseb.) G. Don

Lippia geminata ♂ lockhartii Griseb. = Lantana lockhartii (Griseb.) G. Don

Lippia glauca Rose = Avicennia germinans (L.) L.

Lippia gracilis R. A. Phil. = Acantholippia trifida (C. Gay) Moldenke

Lippia grandiceps Taylor = Aloysia virgata (Ruiz & Pav.) A. L. Juss.

Lippia grisebachii Hieron. = Aloysia gratissima (Gill. & Hook.) Troncoso

Lippia grisebachii Lorentz & Hieron. = Aloysia sellowii (Briq.) Moldenke

Lippia hastatula (Griseb.) Hieron. = Acantholippia hastulata Griseb.

Lippia hastatula Hieron. = Acantholippia hastulata Griseb.

Lippia hastulata Griseb. = Acantholippia hastulata Griseb.

Lippia hastulata (Griseb.) Hieron. = Acantholippia hastulata Griseb.

Lippia hispida Gay = Acantholippia trifida (C. Gay) Moldenke

Lippia ilan ilan Bailes = Aloysia looseri Moldenke

Lippia ilan ilan Baines = Aloysia looseri Moldenke

Lippia imbricata Kuntze = Lantana achyranthifolia Desf.

Lippia inaguensis (Millsp.) Urb. = Nashia inaguensis Millsp.

Lippia incisa E. D. Schulz = Phyla incisa Small

Lippia incisa Small = Phyla incisa Small

Lippia incisa (Small) Tidestr. = Phyla incisa Small

Lippia incisa Tidestr. = Phyla incisa Small

Lippia involucrata Cooper = Lantana involucrata L.

Lippia iresinoides Griseb. = Buddleia iresinoides (Griseb.) Hoss.,
Loganiaceae

Lippia japonica Hort. = Citharexylum ligustrinum Van Houtte

Lippia juncea Gay = Diostea juncea (Gill. & Hook.) Miers

Lippia juncea Gill. & Hook. = Diostea juncea (Gill. & Hook.)
Miers

Lippia juncea (Gill. & Hook.) Schau. = Diostea juncea (Gill. &
Hook.) Miers

Lippia juncea (Miers) Gill. & Hook. = Diostea juncea (Gill. &
Hook.) Miers

Lippia juncea Schau. = Diostea juncea (Gill. & Hook.) Miers

Lippia juncea var. α Gill. = Diostea juncea (Gill. & Hook.)
Miers

Lippia kisi A. Rich. = Lantana kisi A. Rich.

Lippia lagustrina Britton = Aloysia gratissima (Gill. & Hook.)
Troncoso

Lippia lanceolata Michx. = Phyla lanceolata (Michx.) Greene

Lippia lanceolata (Michx.) Greene = Phyla lanceolata (Michx.)
Greene

Lippia lanceolata (Pursh) Michx. = Phyla lanceolata (Michx.)
Greene

Lippia lanceolata Rich. = Phyla lanceolata (Michx.) Greene

Lippia lanceolata Rose = Phyla nodiflora var. reptans (H.B.K.)
Moldenke

Lippia lanceolata var. recognita Fern. & Grisc. = Phyla lanceo-
lata (Michx.) Greene

Lippia leptophylla Loes. = Aloysia leptophylla Loes. & Moldenke

Lippia ligustrifolia G. Thuret = Citharexylum ligustrinum Van
Houtte

Lippia ligustrina Auct. Amer. = Aloysia gratissima (Gill. & Hook.)
Troncoso

Lippia ligustrina Britton = Aloysia gratissima (Gill. & Hook.)
Troncoso

Lippia ligustrina Kuntze = Aloysia gratissima (Gill. & Hook.)
Troncoso

Lippia ligustrina Lag. = Junellia ligustrina (Lag.) Moldenke

Lippia ligustrina (Lag.) Britton = Junellia ligustrina (Lag.)
Moldenke

Lippia ligustrina (Lag.) Kuntze = Junellia ligustrina (Lag.) Moldenke

Lippia ligustrina Nutt. = Aloysia gratissima (Gill. & Hook.) Troncoso

Lippia ligustrina G. Thuret = Citharexylum ligustrinum Van Houtte

Lippia ligustrina var. casadensis Hassler = Aloysia casadensis Hassler & Moldenke

Lippia ligustrina var. lasiodonta Briq. = Aloysia gratissima var. paraguariensis (Briq.) Moldenke

Lippia ligustrina var. paraguariensis Briq. = Aloysia gratissima var. paraguariensis (Briq.) Moldenke

Lippia ligustrina var. schulzii Standl. = Aloysia gratissima var. schulzae (Standl.) Moldenke

Lippia ligustrina O. K. = Aloysia gratissima (Gill. & Hook.) Troncoso

Lippia liliiformes Schrad. = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia lippoides (Cham.) D. Dietr. = Lantana chamissonis (D. Dietr.) Benth.

Lippia lippoides (Cham.) Rusby = Lantana chamissonis (D. Dietr.) Benth.

Lippia lippoides Rusby = Lantana chamissonis (D. Dietr.) Benth.

Lippia lithosperma Mart. = Lantana brasiliensis Link

Lippia litoralis Kunth = Verbena litoralis H.B.K.

Lippia litoralis R. A. Phil. = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia litoralis Kunth = Verbena litoralis H.B.K.

Lippia littoralis Phil. = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia lobata T. S. Bradeg. = Aloysia barbata (T. S. Bradeg.) Moldenke

Lippia lockhartii Grosourdy = Lantana lockhartii (Griseb.) G. Don

Lippia longifolia Sessé & Moc. = Phyla stoechadifolia (L.) Small

Lippia looseri (Moldenke) Looser = Aloysia looseri Moldenke

Lippia lycioides Steud. = Aloysia gratissima (Gill. & Hook.) Troncoso

Lippia lycioides Steud. = Aloysia gratissima (Gill. & Hook.) Troncoso

Lippia macrastachya (Torr.) Wats. = Aloysia macrostachya (Torr.) Moldenke

Lippia macrastachys (Torr.) Wats. = Aloysia macrostachya (Torr.) Moldenke

Lippia macrophylla Cham. = Lantana macrophylla (Cham.) Schau.

Lippia macrophylla R. A. Phil. = Acantholippia deserticola (F. Phil.) Moldenke

Lippia macropoda Torr. = Lantana macropoda Torr.

Lippia macrostachya Torr. = Aloysia macrostachya (Torr.) Moldenke

Lippia macrostachya (Torr.) Moldenke = Aloysia macrostachya (Torr.)
Moldenke

Lippia macrostachya S. Wats. = Aloysia macrostachya (Torr.) Moldenke

Lippia macrostachys Watson = Aloysia macrostachya (Torr.) Moldenke

Lippia maldonadoi Moldenke = Lantana xenica Moldenke

Lippia maritima Kearney = Phyla lanceolata (Michx.) Greene

Lippia mexicana Hocking = Phyla scaberrima (A. L. Juss.) Moldenke

Lippia micrantha Briq. = Lantana micrantha Briq.

Lippia microphylla R. A. Phil. = Acantholippia deserticola (F. Phil.) Moldenke

Lippia modiflora L. = Phyla nodiflora (L.) Greene

Lippia modiflora (L.) Michx. = Phyla nodiflora (L.) Greene

Lippia montana T. S. Brandeg. = Aloysia barbata (T. S. Brandeg.)
Moldenke

Lippia montevidensis Spreng. = Lantana montevidensis (Spreng.)
Briq.

Lippia myrtifolia Griseb. = Nashia myrtifolia (Griseb.) Moldenke

Lippia nahuire Gentry = Aloysia nahuire Gentry & Moldenke

Lippia nipensis Urb. = Nashia nipensis (Urb.) Moldenke

Lippia nodiflora Birch = Phyla nodiflora (L.) Greene

Lippia nodiflora Cham. = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia nodiflora Eggers = Phyla nodiflora var. reptans (H. B. K.)
Moldenke

Lippia nodiflora H. B. K. = Phyla nodiflora (L.) Greene

Lippia nodiflora L. = Phyla nodiflora (L.) Greene

Lippia nodiflora (L.) Boiss. = Phyla nodiflora (L.) Greene

Lippia nodiflora (L.) DC. = Phyla nodiflora (L.) Greene

Lippia nodiflora (L.) Eich. = Phyla nodiflora (L.) Greene

Lippia nodiflora (L.) Michx. = Phyla nodiflora (L.) Greene

Lippia nodiflora (L.) Rich. = Phyla nodiflora (L.) Greene

Lippia nodiflora Lam. = Phyla nodiflora (L.) Greene

Lippia nodiflora Michx. = Phyla nodiflora (L.) Greene

Lippia nodiflora Millsp. = Phyla nodiflora var. reptans (H. B. K.)
Moldenke

Lippia nodiflora Pinch = Phyla nodiflora (L.) Greene

Lippia nodiflora Reichenb. = Phyla nodiflora (L.) Greene

Lippia nodiflora A. Rich. = Phyla nodiflora (L.) Greene

Lippia nodiflora L. C. Rich. = Phyla nodiflora (L.) Greene

Lippia nodiflora (Rich.) Michx. = Phyla nodiflora (L.) Greene

Lippia nodiflora Robinson & Greenm. = Phyla nodiflora var. reptans
(H. B. K.) Moldenke

Lippia nodiflora Rouy = Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia nodiflora Schau. = Phyla nodiflora (L.) Greene

Lippia nodiflora repens Fern. = Phyla nodiflora (L.) Greene

Lippia nodiflora f. repens Knoche = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora race repens Rouy = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora subsp. canescens (H.B.K.) Reyn. = Phyla nodiflora
var. canescens (H.B.K.) Moldenke

Lippia nodiflora subsp. canescens Reyn. = Phyla nodiflora var.
canescens (H.B.K.) Moldenke

Lippia nodiflora subsp. canescens f. pseudosarmentosa Reyn. =
Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia nodiflora subsp. canescens f. pseudo-sarmentosa Reyn. =
Phyla nodiflora var. rosea (D. Don) Moldenke

Lippia nodiflora subsp. repens Rouy = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora var. acutifolia Kuntze = Phyla lanceolata
(Michx.) Greene

Lippia nodiflora var. brevipes Planch. = Phyla nodiflora (L.)
Greene

Lippia nodiflora var. canescens Fiori = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora var. canescens (H.B.K.) Kuntze = Phyla nodiflora
var. canescens (H.B.K.) Moldenke

Lippia nodiflora var. canescens (Kunth) Kuntze = Phyla nodiflora
var. canescens (H.B.K.) Moldenke

Lippia nodiflora var. lanceolata (Michx.) Kuntze = Phyla lanceola-
ta (Michx.) Greene

Lippia nodiflora var. normalis Kuntze = Phyla nodiflora (L.) Greene

Lippia nodiflora var. normalis f. brevipes Kuntze = Phyla strigu-
losa var. parvifolia (Moldenke) Moldenke

Lippia nodiflora var. normalis f. brevipes Planch. = Phyla nodi-
flora (L.) Greene

Lippia nodiflora var. normalis f. canescens (H.B.K.) Kuntze = Phyla
nodiflora var. canescens (H.B.K.) Moldenke

Lippia nodiflora var. normalis f. sericea Kuntze = Phyla strigulosa
var. parvifolia (Moldenke) Moldenke

Lippia nodiflora var. pusilla Briq. = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora var. repanda (H.B.K.) Kuntze = Phyla nodiflora
var. reptans (H.B.K.) Moldenke

Lippia nodiflora var. repens (Bertol.) Schau. = Phyla nodiflora (L.)
Greene

Lippia nodiflora var. repens Schau. = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora var. repens (Spreng.) Briq. = Phyla nodiflora
var. rosea (D. Don) Moldenke

Lippia nodiflora var. reptans (H.B.K.) Kuntze = Phyla nodiflora
var. reptans (H.B.K.) Moldenke

Lippia nodiflora var. rosea D. Don = Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora var. sarmentosa Cavara = Phyla nodiflora var.
rosea (D. Don) Moldenke

Lippia nodiflora var. sarmentosa Schau. = Phyla nodiflora (L.)
Greene

Lippia nodiflora var. sarmentosa Spreng. = Phyla nodiflora var.
rosea (D. Don) Moldenke

Lippia nodiflora var. sarmentosa (Willd.) Schau. = Phyla nodiflora
(L.) Greene

Lippia nodiflora var. sericea Kuntze = Phyla strigulosa var.
parvifolia (Moldenke) Moldenke

Lippia nodiflora var. sericea f. brevipes Kuntze = Phyla strigulosa
var. parvifolia (Moldenke) Moldenke

Lippia nodiflora var. subsessilis Bornm. = Phyla nodiflora var.
subsessilis (Bornm.) Moldenke

Lippia nodiflora var. tarragonensis Sennen = Phyla nodiflora (L.)
Greene

Lippia nodiflora var. ♀ repens Schau. = Phyla nodiflora var.
rosea (D. Don) Moldenke

Lippia nodiflora ♂ sarmentosa Schau. = Phyla nodiflora (L.)
Greene

Lippia nodiflora ♂ vulgaris Walp. = Phyla nodiflora (L.) Greene

Lippia nodiflora ♀ arenaria Walp. = ?Phyla nodiflora var. canescens
(H.B.K.) Moldenke

Lippia nodiflora ♀ repens Schau. = Phyla nodiflora (L.) Greene

Lippia nodiflora ♀ debilis Walp. = ?Phyla nodiflora var. rosea
(D. Don) Moldenke

Lippia nodiflora ♂ umbrosa Walp. = Phyla strigulosa (Mart. &
Gal.) Moldenke

Lippia nodoflora (L.) Michx. = Phyla nodiflora (L.) Greene

Lippia nodoflora Michx. = Phyla nodiflora (L.) Greene

Lippia nodosa L. = Phyla nodiflora (L.) Greene

Lippia noduliflora L. = Phyla nodiflora (L.) Greene

Lippia nudiflora (L.) Michx. = Phyla nodiflora (L.) Greene

Lippia oligophylla Baker = Acrocephalus villosus Benth., Lamiaceae

Lippia ovata L. = Microdon ovatus (L.) Choisy, Selaginaceae

Lippia pallescens Benth. = Lantana canescens H.B.K.

Lippia pavoniana Briq. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.

Lippia peruviana Turcz. = Aloysia peruviana (Turcz.) Moldenke

Lippia polygalaeifolia Steud. = Aloysia polygalaeifolia Cham.

Lippia polystachya Griseb. = Aloysia polystachya (Griseb.) Moldenke

Lippia pulchra Briq. = Aloysia pulchra (Briq.) Moldenke
Lippia purpurea Dum.-Cours. = Lantana trifolia L.
Lippia purpurea Gray = Lantana macropoda Torr.
Lippia purpurea Jacq. = Lantana achyranthifolia Desf.
Lippia purpurea Jacq. f. = Lantana achyranthifolia Desf.
Lippia purpurea Spreng. = Lantana achyranthifolia Desf.
Lippia queratensis H.B.K. = Phyla strigulosa (Mart. & Gal.) Moldenke
Lippia queretanensis Humb. & Bonpl. = Phyla strigulosa (Mart. & Gal.) Moldenke
Lippia queretarensis Kunth = Phyla strigulosa (Mart. & Gal.) Moldenke
Lippia quereturensis Humb. & Bonpl. = Phyla strigulosa (Mart. & Gal.) Moldenke
Lippia radula Mart. = Lantana aristata (Schau.) Briq.
Lippia repens Frch. = Phyla nodiflora var. rosea (D. Don) Moldenke
Lippia repens Hort. = Phyla nodiflora var. rosea (D. Don) Moldenke
Lippia repens Rouy = Phyla nodiflora var. rosea (D. Don) Moldenke
Lippia repens Sch. = Phyla nodiflora var. rosea (D. Don) Moldenke
Lippia repens Spreng. = Phyla nodiflora (L.) Greene
Lippia repens var. decumbens Bonati = Phyla nodiflora var. rosea (D. Don) Moldenke
Lippia reptans H.B.K. = Phyla nodiflora var. reptans (H.B.K.) Moldenke
Lippia reptans Kunth = Phyla nodiflora var. reptans (H.B.K.) Moldenke
Lippia riojana Hieron. = Acantholippia riojana Hieron. & Moldenke
Lippia riorjana Hieron. = Acantholippia riojana Hieron. & Moldenke
Lippia rubiginosa Gill. = Acantholippia seriphiooides (A. Gray) Moldenke
Lippia salsolooides Benth. & Hook. f. = Acantholippia deserticola (F. Phil.) Moldenke
Lippia salsolooides Briq. = Acantholippia deserticola (F. Phil.) Moldenke
Lippia salsolooides (Griseb.) Benth. = Acantholippia deserticola (F. Phil.) Moldenke
Lippia salsolooides (Griseb.) Benth. & Hook. = Acantholippia deserticola (F. Phil.) Moldenke
Lippia salsolooides (Griseb.) Briq. = Acantholippia deserticola (F. Phil.) Moldenke
Lippia sarmentosa Spreng. = Phyla nodiflora (L.) Greene
Lippia sarmentosa (Willd.) Spreng. = Phyla nodiflora (L.) Greene
Lippia schickendantzii Hieron. = Lantana balansae Briq.
Lippia schimperi Hochst. = Lantana viburnoides (Forsk.) Vahl
Lippia scirpea R. A. Phil. = Diostea juncea (Gill. & Hook.) Miers
Lippia scordioides S. Wats. = Aloysia scorodonioides (H.B.K.) Cham.

Lippia scordonioides Humb. & Kunth = Aloysia scorodoniooides (H.B. K.) Cham.

Lippia scordonioides H.B.K. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scordonioides H.B.K. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides Bonpl. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides (Cham.) Kunth = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides Humb. & Bonpl. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides H.B.K. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides Kunth = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides H.B.K. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides var. detonsa Briq. = Aloysia scorodoniooides var. detonsa (Briq.) Moldenke

Lippia scorodoniooides var. hypoleuca Briq. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia scorodoniooides var. macrostachya Gregg = Aloysia macrostachya (Torr.) Moldenke

Lippia scorodoniooides var. mathewsi Briq. = Aloysia scorodoniooides var. mathewsi (Briq.) Moldenke

Lippia scorodoniooides H.B.K. = Aloysia scorodoniooides (H.B.K.) Cham.

Lippia sellowi Briq. = Aloysia sellowii (Briq.) Moldenke

Lippia sellowii Briq. = Aloysia sellowii (Briq.) Moldenke

Lippia seriphiooides A. Gray = Acantholippia seriphiooides (A. Gray) Moldenke

Lippia seriphiooides Gris. = Acantholippia seriphiooides (A. Gray) Moldenke

Lippia spathulata Hayek = Aloysia spathulata (Hayek) Moldenke

Lippia spathulatoides Loes. = Aloysia scorodoniooides var. mathewsi (Briq.) Moldenke

Lippia spinifera Urb. = Nashia spinifera (Urb.) Moldenke

Lippia spiraeoides Mart. = Aloysia sellowii (Briq.) Moldenke

Lippia stachidifolia H.B.K. = Phyla stoechadifolia (L.) Small

Lippia stachydaefolia Wright = Phyla stoechadifolia (L.) Small

Lippia staechadifolia H.B.K. = Phyla stoechadifolia (L.) Small

Lippia stoechadifolia Humb. & Bonpl. = Phyla stoechadifolia (L.) Small

Lippia stoechadifolia Humb. & Kunth = Phyla stoechadifolia (L.) Small

Lippia stoechadifolia H.B.K. = Phyla stoechadifolia (L.) Small

Lippia stoechadifolia Kunth = Phyla stoechadifolia (L.) Small

Lippia stoechadifolia (L.) H.B.K. = Phyla stoechadifolia (L.)

Small

Lippia stoechas Briq. = Lavandula stoechas L., LamiaceaeLippia stoechiadifolia (L.) H.B.K. = Phyla stoechadifolia (L.)

Small

Lippia stoichadifolia (L.) H. B. K. = Phyla stoechadifolia (L.)

Small

Lippia storchiadifolia (L.) H.B.K. = Phyla stoechadifolia (L.)

Small

Lippia strigulosa Mart. & Gal. = Phyla strigulosa (Mart. & Gal.)

Moldenke

Lippia subterranea Rusby = Phyla subterranea (Rusby) MoldenkeLippia tiliaefolia Cham. = Lantana tiliaefolia Cham.Lippia trifida Clos. = Acantholippia trifida (C. Gay) MoldenkeLippia trifida C. Gay = Acantholippia trifida (C. Gay) MoldenkeLippia trifida R. A. Phil. = Acantholippia deserticola (F. Phil.)

Moldenke

Lippia trifida Remy = Acantholippia trifida (C. Gay) MoldenkeLippia triphylla Kuntze = Aloysia triphylla (L'Hér.) BrittonLippia triphylla (L'Hér.) Kuntze = Aloysia triphylla (L'Hér.)

Britton

Lippia turnerifolia Hieron. = Lantana aristata var. angustifolia

(Kuntze) Moldenke

Lippia turnerifolia var. camporum Griseb. = Lantana brasiliensis LinkLippia uncinuligera Nees = Phyla nodiflora var. rosea (D. Don)

Moldenke

Lippia urticifolia Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia urticoides Cham. & Schlecht. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia urticoides (Cham.) Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia urticoides Schau. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia urticoides Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia urticoides Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia urticoides var. laxa Chod. = Aloysia virgata var. laxa (Chod.) MoldenkeLippia urticoides var. platyphylla Briq. = Aloysia virgata var. platyphylla (Briq.) MoldenkeLippia urticoides ♀ parvifolia Mart. = Aloysia gratissima (Gill. & Hook.) TroncosoLippia urticoides Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.Lippia valerianoides Walp. = Valeriana sp., Valerianaceae

Lippia variifolia Urb. = Nashia variifolia (Urb.) Moldenke
Lippia venosa Rusby = Lantana canescens H.B.K.
Lippia viburnoides Vahl = Lantana viburnoides (Forsk.) Vahl
Lippia virgata (Ruiz & Pav.) Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.
Lippia virgata Stend. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.
Lippia virgata Steud. = Aloysia virgata (Ruiz & Pav.) A. L. Juss.
Lippia virgata var. elliptica Briq. = Aloysia virgata var. elliptica (Briq.) Moldenke
Lippia virgata var. laxa Briq. = Aloysia virgata var. laxa (Chod.) Moldenke
Lippia virgata var. platyphylla Briq. = Aloysia virgata var. platyphylla (Briq.) Moldenke
Lippia viricifolia Heiner = Aloysia virgata (Ruiz & Pav.) A. L. Juss.
Lippia wrightii A. Gray = Aloysia wrightii (A. Gray) Heller

LIPPIA ABYSSINICA (Otto & Dietr.) Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 790. 1962.

Synonymy: Lantana polycephala R. Br. in Salt, Voy. Abyss. App. 65, nom. nud. 1814 [not Lippia polycephala Briq., 1904]. Lippia adoensis Hochst., Flora 24, Intell. 1: 23, nom. nud. 1841. Lantana abyssinica Otto & Dietr., Allg. Gartenzeit. 9: 379. 1841. Lippia schimperi Walp., Repert. Syst. Bot. 4: 53. 1845 [not L. schimperi Hochst., 1841]. Lippia adoensis Hochst. ex Walp., Repert. Bot. Syst. 4: 55. 1845.

Bibliography: R. Br. in Salt, Voy. Abyss. App. 65. 1814; Otto & Dietr., Allg. Gartenzeit. 9: 379. 1841; Hochst., Flora 25, Intell. 1: 23. 1841; Walp., Repert. Bot. Syst. 4: 53 & 55-56. 1845; Schau. in A. DC., Prodr. 11: 578-579. 1847; A. Rich., Tent. Fl. Abyss. 2: 167. 1851; Bocq., Adansonia 3: 244. 1863; Aschers. in G. Schweinf., Beitr. Fl. Aethiop. 278. 1867; D. Oliv., Trans. Linn. Soc. Lond. Bot. 29: 132. 1875; Moloney, Sketch Forest. W. Afr. 523. 1887; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 151. 1894; Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 95 & 96. 1894; Gürke in Engl., Pfl. Ost-Afr. C: 337. 1895; J. G. Baker in Thistel.-Dyer, Fl. Trop. Afr. 5: 278 & 280-281. 1900; K. Schum. in Just, Bot. Jahresber. 28 (1): 496. 1902; De Wild., Etud. Fl. Bangala & Ubangi 246. 1911; A. Chev., Etud. Fl. Afr. Cent. Franç. 1: 242. 1913; Holland, Kew Bull. Addit. Ser. 9: 517-518. 1915; Gerth van Wijk, Dict. Plantnames 2: 532. 1916; A. Chev., Expl. Bot. Afr. Accid. Franç. 1: 503. 1920; Hutchins. & Dalz., Fl. W. Trop. Afr. 2 (1): 270. 1931; Moldenke, Alph. List Common Names 13. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 45-47, 49, 50, & 95. 1942; Moldenke, Alph. List Invalid Names 27 & 32. 1942; Darlington & Janaki Ammal, Chromosome Atlas 271. 1945; Moldenke, Phytologia 2: 65, 67, 71-74, 76, 79, 80, 83, 84, & 106-107 (1945) and 2: 339 & 340. 1947; Robyns, Fl. Spermat. Parc Nat. Albert 2: 138-139 & 616. 1947; Moldenke, Alph. List Invalid Names

Suppl. 1: 12. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 82. 1948; Moldenke, Alph. List Cit. 2: 416 (1948) and 3: 901. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 110, 111, 113, 115, 116, 118, 119, & 189. 1949; Moldenke, Phytologia 3: 137 (1949) and 3: 378. 1950; Moldenke, Résumé 134—138, 142, 143, 146, 147, 302, 306, 317, & 460. 1959; Cuf., Bull. Jard. Bot. Brux. 32: Suppl. 790. 1962; Hocking, Excerpt. Bot. A. 5: 45. 1962; Cuf., Senck. Biol. 43: 282 & 329. 1962; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1961: 60 (1962) and 1962: 63. 1963; Moldenke, Résumé Suppl. 7: 8 (1963), 8: 4 (1964), and 11: 7. 1964.

Woody or semi-woody herb, to 2 m. tall, or bush to undershrub, to 4 m. tall, erect; stems strict or branched, becoming suffrutescent and as thick as a man's arm, subhexagonal, strigose-hispid and rough with callose hairs; branchlets short-pubescent; upper internodes sometimes elongate; leaves decussate-opposite, ternate, or in 4's, sometimes even more in a whorl, sessile or subsessile; leaf-blades subcoriaceous, oblong or oblong-lanceolate or oblanceolate-oblong, acuminate at the apex, attenuate at the base, serrate from the middle upwards or obscurely crenate, revolute along the margins, lineate-wrinkled and subrugose as well as rather scabrous or hispid-scabrous and shiny on the upper surface, thinly pubescent or setose and glandular-punctate as well as paler beneath, the lower ones sometimes 10—12.5 cm. long and 2.5 cm. wide, usually gradually smaller toward the apex of the flowering stems or sometimes more uniform in size throughout; inflorescence axillary, in the upper leaf-axils, usually much surpassed by the subtending leaves; peduncles slender, axillary, rigid, short or even very short, 1—1.3 cm. long, single or several in each upper leaf-axil, strigose-hispid and rough with callose hairs; heads small, numerous, permanently globose, many-flowered, 6—7 mm. wide; bractlets multifarious, ovate, acuminate or cuspidate at the apex, twice as long as the calyx and subequaling the corolla, squarrose, rigid, canescent-hairy, the outer ones 3 mm. wide; flowers odorous or with very little scent; calyx about 1.5 mm. long, completely white-villous, the hairs bifarious, long, [Schauer says: "villo disci appresso, laterum vero pectinate patente"]; corolla hypocrateriform, white or whitish to cream or pale-yellow, rarely lilac or the color of heliotrope (Heliotropium arborescens) with a yellow center, subequaling the subtending bractlet, canescent-hirtellous on the outer surface.

The original description of this plant by Otto & Dietrich (1841) is most important and is reproduced herewith: "L. ramis inermibus; foliis verticillatis ternis, brevissime petiolatis, lanceolatis, acutis, basi attenuatis, supra rugosis scabris, subtus subvillosis; capitulis axillaribus, verticillatis, breviter pedunculatis, subglobosis; bracteis ex ovata basi longe acuminatis, tubum corollae aequantibus. Sehr wahrscheinlich ist dies die L. polycephala Rob. Br., die dieser gelehrte Botaniker in dem Verzeichniss der Pflanzen von Congo, jedoch nur namentlich, aufführt, weshalb sich dies auch nur vermuten, aber nicht bestimmt erweisen lässt. Es scheint übrigens gar keine Lantana zu sein, sondern zu

Lippia oder Zapania zu gehören, was übrigens auch ohne Ansicht der Früchte nicht zu bestimmen ist. — Sie wurde aus Samen von Herrn Schimper unter Nr. 305 eingeführt, und uns vom Herrn Garten-Inspector Held in Karlsruhe mitgetheilt. Die Pflanze ist halb strauchartig, mit langen krautartigen Aesten, die unbewaffnet, und mit kurzen anliegenden Haaren besetzt und dadurch scharf sind. Die Blätter stehen quirlförmig an drei um den Stengel, sind ganz kurz gestielt mit kaum über eine Linie langen Blattstielen, sind drei Zoll und darüber lang, einen Zoll breit, lanzettförmig, spitz, an der Basis in den Blattstiel verschmäler, sehr dicht und fein gekerbt, auf der Oberfläche runzelig, scharf und zerstreut kurzhaarig, auf der Unterfläche etwas bleicher, weicher und kurzzottig. Die Blüthenköpfe stehen in jeder Blattquirlachsel gewöhnlich zu sechs, an ungefähr einen Zoll langen, zottigen Blumenstielen, sind fast kugelrund, nicht grüner als eine starke Ernse, und sich nach dem Blühen wahrscheinlich etwas verlängernd. Die Deckblätter sind an der Basis breit und eirund, verschmäler sich dann aber plötzlich in eine lange schmale Spitze, die jedoch die Blumenkronen nicht überragt; sie sind zottig und bewimpert. Die Blumenkronen sind weiß, mit einer schwach ins Graue gehenden Färbung. Die Blüthen haben einen starken Citronengeruch." They say of it "habitat in Abyssinia h." Cufodontis (1962) says: "Type: cultus in h. Karlsruhe e seminibus ex Abyssinia, Schimper 305."

Richard (1851) says of L. adoënsis: "C'est une espèce excessivement polymorphe: tantôt tomenteuse et l'un gris cendré, tantôt brunâtre, et à poils écartés et très-rudes. Ses feuilles sont ou ovales allongées aiguës, ou étroites et lancéolées, toujours marquées de dentelures fines dans leur contour, excepté vers la partie inférieure de leurs bords qui est entière; les capitules sont longuement pédonculés, groupés au nombre de trois à quatre à l'aisselle des feuilles supérieures. La surface supérieure des feuilles est comme bulleuse et chagrinée."

The type of Lippia adoënsis was collected by Georg Heinrich Wilhelm Schimper (no. II.1079) on mountainsides close to deep valleys at Ferrera, Abyssinia, and was deposited in the herbarium of the Botanisches Museum at Berlin, but is now destroyed. It is worth noting here that Lippia schimperi Hochst. is a synonym of Lantana viburnoides (Forsk.) Vahl.

Schauer (1847) and Schumann (1902) regard L. grandifolia Hochst. as a synonym of the species here under discussion, but in my opinion the characters given by Richard (1851) as separating these two species are quite valid and adequate, so I am regarding them as two separate taxa, albeit closely related to each other [cfr. L. grandifolia in this present series of notes]. I have seen type material of both L. grandifolia [Schimper II.734] and of L. adoënsis [Schimper II.1079]. Hutchinson goes so far as to add even L. rugosa A. Chev. to this synonymy. If this were true, then the statements made by some authors that the inflorescence of L. abyssinica is "very variable, the very numerous heads sometimes

forming a dense terminal panicle" would have justification. Certain authors also make the assertion that the leaves "barely exceed the peduncles in length in the inflorescence"; actually I have often seen them as large there as farther down the stem in the true L. abyssinica.

The species is a member of Section Dipterocalyx, and has been found growing on savannas or Combretum savannas, in grasslands, among underbrush, and at the edge of water, as well as on steep mountainsides adjacent to deep valleys, at altitudes of 1000 to 2500 meters, flowering in May, August, October, and November, and fruiting in May and August. A notation on A. Chevalier 10655 avers that it is employed in internal medicine in Ubangi. Holland (1915) reports its use medicinally by the natives of Nigeria.

In regard to the color of the flowers: they are described as "white" on A. Chevalier 5395 & 5396; "whitish" by J. G. Baker; "cream-color" on H. M. Gardner 3727; "pale-yellow" on Lugard 109; and "the color of the heliotrope of gardens" on J. O. Cooper s.n.

Common and vernacular names recorded for the species include "afurati", "bahé", "bahé bahé", "bambara", "bormbor", "borombor", "bonoumou", "bush tea", "chessehié", "dama-kasse", "diohuli", "efinrin-gogara", "fasau", "fetfetti", "fetfettis", "foulah", "fuban", "Gambia tea", "gane ba", "ganéba", "guéri", "guilel", "kani ba", "kasí", "kimbo", "kingkilli ba", "koulikoro", "mbalhat", "mbormbor", "ngásu", "ngásuru", "nyóna", "saa-nunum", and "sisiling hyamo".

Material of this species has been misidentified and distributed in herbaria under the name Lantana viburnoides Vahl. On the other hand, the Dawe 30, distributed as L. adoënsis, is actually L. chevalieri Moldenke, Humbert 8182 is L. grandifolia Hochst., Schlieben 319 is L. javanica (Burm. f.) Spreng., and Lely 115 and Gossweiler 14070 are L. nigeriensis Moldenke.

Baker (1900) distinguishes the tropical African species of Lippia known to him as follows:

1. Bractlets orbicular, obtuse at the apex.
 2. Peduncles very short.....L. oatesii Rolfe.
 - 2a. Peduncles elongate.....L. radula J. G. Baker.
 - 1a. Bractlets not orbicular, not obtuse at the apex.
 3. Bractlets cuspidate at the apex.
 4. Leaves small.
 5. Leaf-blades orbicular to obovate....L. somalensis Vatke.
 - 5a. Leaf-blades oblong, rugose.....L. javanica (Burm.f.) Spreng.
 - 4a. Leaves larger, oblong or oblanceolate-oblong, scarcely rugose.....L. abyssinica (Otto & Dietr.) Cuf.
 - 3a. Bractlets not cuspidate.
 6. Bractlets acuminate at the apex.
 7. Leaves decussate-opposite.....L. ukambensis Vatke.
 - 7a. Leaves ternate.....L. burtonii J. G. Baker.
 - 6a. Bractlets merely acute at the apex.....L. plicata J. G. Baker.

Chevalier (1920) cites his no. 2771 and two s.n. collections from Senegal, his 12948 and Caille 14772 & 18059 from French Guinea, and his 67, 307, 2772, and three s.n. collections from French Soudan. I regard Chevalier 67 and Caille 14772 as representing L. chevalierii Moldenke.

De Wildeman (1911) cites Thonner 234 from Bangala & Ubangi. Baker (1900) cites the following: MALI: Senegambia: Thierry 227. ABYSSINIA: Plowden s.n.; Quartin-Dillon s.n. [Maigouagoua]; Schimper 42, 734, & 1079. SENEGAL: Heudelot 103. GAMBIA: Brown-Lester 4 & 28; Ingram s.n. SIERRA LEONE: Scott-Elliott 4262, 4285, & 4878. NIGERIA: Baikie 11; Barter 768; Millen 143. CONGO LEOPOLDVILLE: Burton s.n.; Dupuis s.n. [Bingila]; Smith s.n.; Soyaux 67. UGANDA: Wilson 130. KENYA: Petherick s.n. [Neangara]; Schweinfurth 2230 & 2687; Speke & Grant s.n. [Unyoro]. ANGOLA: Johnston s.n.; Monteiro s.n.; Welwitsch 5627 & 2741.

Chevalier (1913) cites his nos. 5395, 5396, 7483, & 10655 from Ubangi-Chari in the Central African Republic. Hutchinson & Dalziel (1931) say of this species that it inhabits chiefly the grass savannas and is found in "Senegal and French Sudan to Northern Nigeria and Lagos Colony, extends to eastern and southern tropical Africa." They cite Baikie 11; Barter 768; Brown-Lester 4 & 28; Chevalier 20410; Dalziel 177; Heudelot 103; Ingram s.n.; Johnson 542 & 584; Mildbraed 7238; Millen 143; Scott Elliot 4262, 4285, & 4878; and Thierry 227. However, I regard Brown-Lester 4 & 28, Ingram s.n., and Thierry 227 as L. chevalierii Moldenke. Not having as yet seen any of the other collections cited, I am not at all certain that all (or any) of them really represent L. abyssinica.

In all, 16 herbarium specimens, including the type collections of at least some of the names involved, and 12 mounted photographs of L. abyssinica have been examined by me.

Citations: ERITREA: Pappi 2176 (S), 5602 (Ca--994347). ETHIOPIA: J. O. Cooper s.n. [Djem-Djem Forest, IX.X.26] (K); Quartin-Dillon s.n. [1862] (F--photo, K, N--photo, Sg--photo, Z--photo); Schimper 42 (F--photo, K, N--photo, Sg--photo, Z--photo), 464 (B), II.1079 (B, E--116703), III.1452 (E--116704, F--photo, N, N--photo, S, Si--photo, Z--photo). CONGO LEOPOLDVILLE: Lebrun 4588 (K). UGANDA: Lugard 109 (K, N). KENYA: V. Bogden VB.555 (Ca--984106); H. M. Gardner 3727 (K).

LIPPIA ABYSSINICA var. PUBESCENS (Moldenke) Moldenke, comb. nov.

Synonymy: Lippia adoënsis var. pubescens Moldenke, Phytologia 8: 58. 1961.

Bibliography: Moldenke, Phytologia 8: 58. 1961; Anon., Assoc. Etud. Tax. Fl. Afr. Trop. Index 1961: 60. 1962; Moldenke, Résumé Suppl. 3: 16. 1962; Hocking, Excerpt. Bot. A.5: 45. 1962.

This variety differs from the typical form of the species in having its stems and branches, as well as the under surface of the leaves, densely brown-pubescent.

The type of the variety was collected by B. B. Drummond and J. H. Hemsley (no. 4496) on a grassy hillside with scattered shrubs and shrub thickets, subject to burning, at Katera, at an altitude of 1200 meters, Maskara district, Uganda, on October 1, 1953, and is deposited in the herbarium of the Botanisches Museum at Berlin.

In all, only 2 herbarium specimens, including the type, have been examined by me.

Citations: UGANDA: Drummond & Hemsley 4496 (B-type, Z-isotype).

LIPPIA ACUMINATA C. Wright ex Griseb., Cat. Pl. Cuba 215. 1866.

Bibliography: Griseb., Cat. Pl. Cuba 215. 1866; Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 95. 1894; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 25 & 95. 1942; Moldenke, Phytologia 2: 384. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 44 & 189. 1949; Moldenke, Alph. List Cit. 4: 1258. 1949; Alain in León & Alain, Fl. Cuba 4: 288 & 289. 1957; Moldenke, Résumé 52 & 460. 1959.

Shrub, 2-3 m. tall, conspicuously odorous; stems frutescent, tetragonal, subglabrous; leaves ovate, 3-5 cm. long, about 4 cm. wide, acuminate at the apex, serrate toward the apex, cuneate-rounded and entire at the base, short-petiolate, strigillose above and very shortly scabrous, subglabrous beneath except for dense glandular dots; heads subglobose, finally becoming short-oblong; peduncles axillary, very short, shorter than the petiole; bractlets subrotund, cuspidate at the apex, subglabrous, subequaling the corollas; calyx very minute, subcylindric, obtusely bilobed, many times shorter than the corolla-tube; corolla white.

The type of this rare species was collected by Charles Wright (no. 3162) somewhere in western Cuba ["Cuba occ."] between 1860 and 1864, and is deposited in the Sauvalle Herbarium at the Academia de Ciencias in Havana, Cuba. The species has been collected in rocky places, at the base of cliffs, and on mountaintops, at altitudes of 950 to 1000 meters, in flower in July, and in fruit in January and March.

In all, 5 herbarium specimens, including the type, and 8 mounted photographs have been examined by me.

Citations: CUBA: Las Villas: Alain 6373 (Z); Ekman 16243 (F-photo, N, N-photo, S, Si-photo, Z-photo), 18959 (S). Province undetermined: C. Wright 3162 [Cuba occ.; Herb. Sauvalle 1758] (F-photo of type, Hv-type, Hv-isotype, N-photo of type, Si-photo of type, Z-photo of type).

LIPPIA ACUTIDENS Mart. & Schau. ex Schau. in A. DC., Prodr. 11: 590-591. 1847.

Bibliography: Schau. in A. DC., Prodr. 11: 590-591. 1847; Schau. in Mart., Fl. Bras. 9: 246-247. 1851; Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 95. 1894; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 37 & 95. 1942; Moldenke, Alph. List Cit. 1:

223 (1946) and 3: 691 & 712. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 80 & 189. 1949; Moldenke, Résumé 92 & 460. 1959.

Shrub, to about 2 m. tall; stems erect, subsimple, tetragonal, smooth; branches tetragonal, pubescent; leaves decussate-opposite, rather heavy or coriaceous, ovate or subrotund, very short-petiolate, almost 2 cm. long, 0.8-1 cm. wide, apparently quickly deciduous, entire at the base, acutely dentate at the apex, rigidly ciliate, the teeth somewhat prickly, prominently venose beneath, glabrous and shiny on both surfaces when adult; heads short-pedunculate, eventually subspicate, solitary in the leaf-axils, subcorymbose-congested at the apex of the branches; bractlets squarrose, subherbaceous-membranous, concave, broadly ovate, 3-nerved, subtomentose-hirsute, the acumen declinate; calyx villous, 2-parted, the lobes obtuse at the apex; corolla rose, yellowish in the throat, hirtellous on the outer surface, its tube 4 mm. long, equaling the subtending bractlet, swollen at the mid-point, the limb bent downwards, velutinous on the upper surface; fruit adhering to the calyx, recondite, oblong, one of the pyrenes often tabescent.

The type of this apparently rare species was collected by Carl Friedrich Philipp von Martius in fields at Yha, Minas Gerais, Brazil, adjoining the boundary of Goiás, in September, 1818, and is deposited in the Martius Herbarium at the Botanisches Museum in Munich. The species is a member of the Section Euzapania, Subsection Corymbosae. It has been collected in flower and fruit in May, July, and September.

In all, 4 herbarium specimens and 4 phototypes have been examined by me.

Citations: BRAZIL: Maranhão: Murça Pires & Black 1624a (Be-50206), 2342 (Be-58767). Minas Gerais: Martius s.n. [Yha; Macbride photos 20319] (Kr--photo of type, N--photo of type). Piaui: G. Gardner 2940 (M, N).

LIPPIA ADPRESSA Hayek in Fedde, Repert. Nov. Sp. 2: 87. 1906.

Bibliography: Hayek in Fedde, Repert. Nov. Sp. 2: 87. 1906; Prain, Ind. Kew. Suppl. 4: 142. 1913; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 37 & 95 (1942) and [ed. 2], 80 & 189. 1949; Moldenke, Alph. List Cit. 3: 695 (1949) and 4: 1296. 1949; Moldenke, Résumé 92 & 460. 1959; Moldenke, Résumé Suppl. 8: 2. 1964.

Subshrub, about 50 cm. tall; branches few, elongate, appressed-pubescent; leaves decussate-opposite, sessile, imbricate, about 1 cm. long, ovate, deeply cordate at the base, subacute at the apex, revolute along the margins, appressed to the stem, flat, serrulate toward the apex, smooth above, glistening subsericeous-tomentose beneath; inflorescence capitate, the heads aggregate at the tips of the branches, in the axils of the uppermost leaves; peduncles subequaling the subtending leaves; bractlets ovate-lanceolate, about 5 mm. long, acute at the apex, sericeous-villous; corolla surpassing the bractlets, glabrous.

The type of this rare species was collected by George Gardner (no. 3933) in Goias, Brazil, and is deposited in the herbarium of the Naturhistorisches Museum in Vienna, where it was photographed by Macbride as his type photograph no. 34328. Hayek comments "Habitu Lippiae teguliferae Briq.....non dissimilis, foliis autem omnino planis nequaquam nervoso-rugosis, indumento alieno capitulisque longius petiolatis valde diversa." The original description gives Gardner 2933 as the type collection, but this appears to be a typographic error for "3933" as is plainly indicated on the Vienna holotype.

Thus far, only 2 herbarium specimens and 3 phototypes have been examined by me.

Citations: BRAZIL: Brasilia: Murça Pires, Silva, & Souza 9669 (Lw, Z). Goias: G. Gardner 3933 [Macbride photos 34328] (It--photo of type, Kr--photo of type, N--photo of type).

LIPPIA AFFINIS Schau. in A. DC., Prodr. 11: 576. 1847 [not *L. affinis* Briq., 1896].

Bibliography: Schau. in A. DC., Prodr. 11: 576. 1847; Schau. in Mart., Fl. Bras. 9: 225. 1851; Hiern, Vidensk. Meddel. Kjøbenh. 1877-1878: 97. 1877; Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 95. 1894; Moldenke, Phytologia 1: 167. 1935; Moldenke, Alph. List Common Names 23 & 25. 1939; Moldenke, Phytologia 1: 504. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 39, 40, & 95. 1942; Moldenke, Lilloa 8: 414. 1942; Moldenke, Phytologia 2: 81 & 107. 1945; Moldenke, Alph. List Cit. 1: 43 (1946), 2: 362-364, 413, 551, & 628 (1948), 3: 730 (1949), and 4: 1064, 1073, 1075, 1094, & 1134. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 80, 97, & 189. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 9. 1949; Moldenke, Bol. Soc. Venez. Cienc. Nat. 11: 289. 1950; Calpouzos, Econom. Bot. 8: 228. 1954; Moldenke, Inform. Mold. Set 48 Spec. [3]. 1954; Mendes Magalhães, Anais V Reun. Anual Soc. Bot. Bras. 254-255 & 272-273. 1956; Moldenke, Résumé 92, 114, & 460. 1959; Rennó, Levant. Herb. Inst. Agron. Minas 150. 1960;

Shrub or bush, 0.8-2 m. tall; branchlets subterete, tomentose; leaves decussate-opposite; petioles very slender, about 1.1 cm. long; leaf-blades ovate, to 3.3 cm. long and 1.6 cm. wide, acute at the apex, rounded or subcordate at the base, crenate along the margins, penninerved, rugose and beautifully holosericeous above, incano-tomentose beneath; peduncles axillary, aggregate, flaccid, pulverulent-glandulose and incano-villous; heads 4-angled, ovoid, reaching to about the middle of the subtending leaf; bractlets green, ovate, equaling the corolla-tube, complicate-acuminate, patulous, pulverulent-glandulose and incano-villous, the acumen turned inwards; corolla hypocrateriform, white or yellowish.

The type of this perplexing species was collected by Guilherme Schuch de Capanema and Ludwig Riedel somewhere in Brazil and was deposited in the herbarium of the Botanisches Museum at Berlin, now unfortunately destroyed. The species is a member of the Section *Goniostachyum* along with such closely related species as *L.*

graveolens H.B.K., L. origanoides H.B.K., L. glandulosa Schau., L. elegans Cham., L. gracilis Schau., L. martiana Schau., L. obscura Briq., L. pendula Rusby, L. rubiginosa Schau., L. salviaeefolia Cham., L. schomburgkiana Schau., L. sidoides Cham., L. velutina Schau., and others. Schauer (1851) says "Lippiae microphyllae accedit capitulis et fere indumento, recedit tamen ab ea foliorum figura et magnitudino L. origanoidi primo intuitu similis apparel, differt vero bracteis et foliis basi rotundatis."

Lippia affinis has been found on campos and in scrubby open woods, at altitudes of 600 to 2000 meters, blooming in January, February, April, and November. Mexia reports it "common locally" at Fazenda do Diamante, where it is made into a tea and is used in the treatment of dysentery. The corolla is reported as white on F. C. Hoehne s.n. [Herb. Inst. Bot. S. Paulo 2754 & 5217], Sampaio 6829, Mexia 5625, and Williams & Assis 5809, and as yellowish on Mendes Magalhães 2507. Common names reported for the species are "camará", "orégano", "oregano di burro", and "poleo". Calpouzos (1954) points out that this is one of the many plants called "oregano", "oregeno", "origano", or "oragano" along with L. formosa T. S. Brandeg., L. fragrans Turcz., L. graveolens H.B.K., L. micromera Schau., L. micromera var. helleri (Britton) Moldenke, L. origanoides H.B.K., L. palmeri S. Wats., L. palmeri var. spicata Rose, L. pendula Rusby, Lantana involucrata L., L. achyranthifolia Desf., L. trifolia L., Coleus amboinicus Lour., Hedemora floribunda Standl., H. patens Jones, Hyptis albida H.B.K., H. americana (Aubl.) Urb., H. capitata Jacq., H. suaveolens (L.) Poit., Limnophila stolonifera (Blanco) Merr., Monarda austromontana Epl., Ocimum basilicum L., Origanum vulgare L., O. majorana L., Poliomintha longiflora Gray, and Salvia sp. The name "poleo" is applied also to L. alba (Mill.) N. E. Br., L. grisebachiana Moldenke, L. integrifolia (Griseb.) Hieron., L. turbinata Griseb. and its varieties, and Mentha pulegina L.

The Lippia affinis of Briquet is a synonym of Aloysia sellowii (Briq.) Moldenke. The Kuntze s.n. [Velasco, 200 m., VII.92], cited hereinafter under L. salviaeefolia Cham., may prove to represent L. affinis instead.

Material of L. affinis has been misidentified and distributed in herbaria under the names L. berterii Spreng. and L. graveolens H.B.K. On the other hand, the Curran & Haman 606, 966, & 1150a, Garcia Barriga 4875, Lehmann B.T. 818 (in part), H. Pittier 8096, 8251, 9671, & 10542, Saer 62, H. H. Smith 587, and Tamayo 326 & 976, distributed as L. affinis, are all L. origanoides H.B.K.

In all, 21 herbarium specimens of L. affinis have been examined by me.

Citations: BRAZIL: Minas Gerais: Black & Mendes Magalhães 51-11776 (Be--69604); F. C. Hoehne s.n. (N, N, Sp, Sp--5217); Mendes

Magalhães 2507 [Herb. Jard. Bot. Belo Horiz. 43709] (N); Mexia 5625 (Gg, Go, N, N, S); Sampaio 6829 [Herb. Jard. Bot. Belo Horiz. 12307] (N); L. B. Smith 7069 (N, Z); Williams & Assis 5809 (G, N). São Paulo: Viegas & Viegas s.n. [Herb. Inst. Agron. Est. S. Paulo 3980] (W--1775602). BOLIVIA: Santa Cruz: Kuntze s.n. [Sta. Cruz, 1000 m., V.92] (N, W--701990), s.n. [Sierra, 2000 m., 5.1892] (N). LOCALITY OF COLLECTION UNDETERMINED: Herb. Martius 12008 (Br).

LIPPIA ALBA (Mill.) N. E. Br. ex Britton & Wils., Scient. Surv. Porto Rico 6: 141. 1925.

Synonymy: Nepeta maxima flore albo, spica habitiori Sloane, Cat. Pl. Ins. Jamaic. 1: 65. 1696. Lantana alba Mill., Gard. Dict., ed. 8, Lippia no. 8. 1768. Verbena globiflora L'Hér., Stirp. Nov. 1: 22--23, pl. 12. 1786. Zappania odoratissima Scop., Delic. Fl. & Faun. Insub. 1: 34--35, pl. 15. 1786. Zapania lantanoides Lam., Tabl. Encycl. Méth. Bot. 1: 58. 1791. Zapania globiflora (L'Hér.) Willd., Sp. Pl. 1: 116. 1797. Lippia asperifolia A. Rich. ex Marthe, Cat. Pl. Jard. Méd. Paris 67. 1801 [not L. asperifolia Benth., 1947, nor Hochst., 1947, nor Reichenb., 1828, nor L. C. Rich., 1906]. Verbena globifera L'Hér. ex A. Rich. in Marthe, Cat. Pl. Jard. Méd. Paris 67, in syn. 1801. Zapania globiflora A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 72. 1806. Zapania odorata Pers., Syn. Pl. 2: 140. 1806. Lippia geminata H.B.K., Nov. Gen. & Sp. Pl. 2: 266. 1818 [not L. geminata Millsp., 1930, nor Schl., 1964]. Verbena odorata Pers. ex Steud., Nom. Bot., ed. 1, 873 & 898. 1821 [not V. odorata Desf., 1841, nor Meyen, 1834, nor Meyer, 1946]. Zapania odoratissima Scop. apud Steud., Nom. Bot., ed. 1, 898, in syn. 1821. Lantana geminata (H.B.K.) Spreng. in L., Syst. Veg., ed. 16, 2: 763. 1825. Verbena lantanoides Willd. ex Spreng. in L., Syst. Veg., ed. 16, 2: 763, in syn. 1825. Lippia geminata Kunth apud Spreng. in L., Syst. Veg., ed. 16, 2: 763, in syn. 1825; Schau. in A. DC., Prodr. 11: 582. 1847. Verbena globulifera L'Hér. apud Spreng. in L., Syst. Veg., ed. 16, 2: 751, in syn. 1825. Lantana mollissima Desf., Cat. Hort. Par., ed. 3, 393. 1829. Lippia citrata Willd. ex Cham., Linnaea 7: 215, in syn. 1832. Lippia asperifolia Poepp. ex Cham., Linnaea 7: 215, in syn. 1832. Lantana odorata Weigelt ex Cham., Linnaea 7: 215, in syn. 1832 [not L. odorata Ait., 1847, nor L., 1767]. Lippia citrata Cham., Linnaea 7: 214. 1832. Lantana lippoides Hook. & Arn., Bot. Beech. Voy. 305. 1837. Lantana geminata Spreng. apud Steud., Nom. Bot., ed. 2, 2: 8. 1841. Verbena globulifera Auct. ex Steud., Nom. Bot., ed. 2, 2: 54 & 750, in syn. 1841. Lippia geminata Humb. & Bonpl. ex Steud., Nom. Bot., ed. 2, 2: 54, in syn. 1841. Zappania odorata Pers. ex Steud., Nom. Bot., ed. 2, 2: 797, in syn. 1841. Zappania lantanoides Lam.

ex Steud., Nom. Bot., ed. 2, 2: 797. 1841. Lantana cuneatifolia Klotzsch ex Walp., Repert. Bot. Syst. 4: 45, in syn. 1845. Nepeta maxima flore albo, spica habiliiori Sloane ex Walp., Repert. Bot. Syst. 4: 47, in syn. 1845. Lippia geminata Humb. & Kunth ex Benth., Bot. Voy. Sulphur 153. 1846. Lantana geminata Spreng. ex Morren, Belg. Hort. 1: 134, in syn. 1851. Verbena lantanoides Auct. ex Morren, Belg. Hort. 1: 134, in syn. 1851. Lantana lippioides Hook. & Arn. ex Morren, Belg. Hort. 1: 134, in syn. 1851. Zapania globiflora Poir. apud Schau. in Mart., Fl. Bras. 9: 236, in syn. 1851. Lippia geminata var. microphylla Griseb., Abhand. König. Gesell. Wissen. Götting. 7: 255. 1857. Lippia panamensis Turcz., Bull. Soc. Nat. Mosc. 36 (2): 201. 1863. Lippia havannensis Turcz., Bull. Soc. Nat. Mosc. 36 (2): 202. 1863. Lippia asperifolia H.B.K. ex Bocq., Adansonia 3: 244. 1863. Zapania geminata (H.B.K.) Gibert, Enum. Pl. Montev. 44. 1873. Lippia lantanoides Coult., Contrib. U. S. Nat. Herb. 2: 328--329. 1892. Lippia crenata Sessé & Moc., Fl. Mex., ed. 2, 140. 1894 [not L. crenata (Griseb.) Kuntze, 1898, nor Kuntze, 1904, nor Pearson, 1959]. Lippia havanensis Turcz. apud Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 95. 1894. Lippia globiflora (L'Hér.) Kuntze, Rev. Gen. Pl. 3 (2): 251. 1898. Lippia globiflora albiflora Kuntze, Rev. Gen. Pl. 3 (2): 252, nom. nud. 1898. Lippia globiflora f. pubescens Kuntze, Rev. Gen. Pl. 3 (2): 252, nom. nud. 1898. Lippia globiflora α normalis Kuntze, Rev. Gen. Pl. 3 (2): 251. 1898. Lippia globiflora α normalis f. lilacina Kuntze, Rev. Gen. Pl. 3 (2): 251. 1898. Lippia globiflora β geminata (H.B.K.) Kuntze, Rev. Gen. Pl. 3 (2): 251--252. 1898. Lippia globiflora β geminata f. glabriuscula Kuntze, Rev. Gen. Pl. 3 (2): 252. 1898. Lippia globiflora δ microphylla Griseb. ex Kuntze, Rev. Gen. Pl. 3 (2): 252. 1898. Lippia globiflora δ microphylla f. glabriuscula Kuntze, Rev. Gen. Pl. 3 (2): 252. 1898. Zapania lantanodes Lam. ex Kuntze, Rev. Gen. Pl. 3 (2): 251, in syn. 1898. Lippia globiflora Kuntze apud Thiselt.-Dyer, Ind. Kew. Suppl. 2: 106, in syn. 1904. Lippia globiflora var. normalis Kuntze apud Briq., Ann. Conserv. & Jard. Bot. Genève. 7-8: 315. 1904. Verbena globulifera Spreng. apud H. J. Lam, Verbenac. Malay. Arch. 369, in syn. 1919. Lippia globiflora var. geminata (Kunth) Kuntze apud Seckt, Rev. Univ. Nac. Cordoba 17: 89. 1930. Lippia lantanoides (Lam.) Herter, Revist. Sudam. Bot. 4: 185. 1937. Zapania globiflora (L'Hér.) Willd., Poir., & Juss. ex Moldenke, Lilloa 4: 294, in syn. 1939. Zapania globiflora (L'Hér.) Juss. ex Moldenke, Prelim. Alph. List Invalid Names 54, in syn. 1940. Zapania globiflora (L'Hér.) Poir. ex Moldenke, Prelim. Alph. List Invalid Names 54, in syn. 1940. Lippia

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Illustrations: Sloane, Voy. Jam. 1: pl. 108, fig. 1. 1707; Nair & Rehman, Bull. Nat. Bot. Gard. Lucknow 76: 9, pl. 1, fig. 3, text-fig. 13-16. 1962.

An erect perennial herb or straggly, aromatic, densely puberulent, low, coarse, erect shrub or subshrub, to 2 m. tall, with a strong lemon (*Citrus limonia*), lime (*C. aurantifolia*), mint (*Mentha*) or sage (*Salvia*) odor, sometimes scrambling, procumbent or semi-procumbent, or more or less decumbent, rarely creeping or scandent, usually much branched from the base and with long rooting suckers there; stems many, to 1.5 cm. in diameter, rooting at the nodes; branches elongate, slender, ascending or pendulous, sometimes arching, trailing, or prostrate; leaves decussate-opposite or ternate, thickish, very aromatic-fragrant; petioles slender, 3-8 mm. long, cinereous-pubescent; leaf-blades ovate or oblong, 2-7 cm. long, usually 1.2-2.3 cm. wide, dark-green above, acute or obtuse at the apex, conspicuously serrate or serrulate to crenate along the margins (except at the very base), mostly cuneate or narrowed into the petiole at the base, strigose-hirtellous or puberulent and more or less rugose (when mature) above, densely short-pubescent or soft-velvety to tomentose beneath with cinereous hairs; inflorescence axillary, capitate, usually much shorter than the subtending leaves or only subequaling the petiole, solitary or rarely paired in all the upper leaf-axils; peduncles slender, mostly solitary in the leaf-axils and 2 per node; heads globose or subglobose to shortly oblong, 8-12 mm. long, about 8 mm. wide; bractlets ovate, 3-5 mm. long, acute at the apex, the lowermost 3-3.5 mm. wide, nearly as long as the corolla, not accrescent; flowers fragrant or non-odorous; calyx 2-toothed; corolla hypocrateriform, varying from pinkish-blue, light violet-blue, pink, light-pink, pinkish, rose, pale-rose, or lilac-rose to light-lilac, lilac, pale-lilac, rose-lilac, purple-lilac, light-purple, pale-purple, pink-purple, purple, violet-purple, and even violet, pale reddish-violet, lavender, mauve, or white, often white or yellowish to yellow on the inner surface, its tube 4-5 mm. long, about 3 times as long as the calyx; pollen-grains prolate spheroidal, $32 \times 30 \mu$, the ectocolpium narrow and faint, the endocolpium clear, lalongate, $3.5 \times 19.2 \mu$, the lateral ends pointed, the exine 2.8μ thick, the ectine surface

granulate; chromosomes small, their number: $2n = 40$ (42?).

The type of this common and widely distributed, apparently very variable species was collected by William Houstoun in Campeche, Mexico, and is deposited in the Philip Miller Herbarium at the British Museum (Natural History) in London. It is represented by the L. H. Bailey Hortorium negative 5057. N. E. Brown says that the Columbia University Herbarium specimen of Pringle 1960 is an exact match for Houstoun's specimen, except that the leaves are rather more deeply toothed in Houstoun's plant.

The species is widely distributed through the West Indies, Mexico, Central America, and tropical and subtropical South America south to Argentina; introduced and often escaped from cultivation elsewhere. The specific epithet is sometimes uppercased for no valid reason. The plant belongs in the Section Zapania, Subsection Axilliflorae.

The so-called type of Lippia asperifolia A. Rich. was collected from a cultivated plant in the Jardin des Plantes in Paris, a duplicate being deposited in the DeCandolle Herbarium at Geneva, but this name is actually a nomen illegitimum based on Verbena globiflora L'Hér. The type of Lippia asperifolia Poepp. was collected by Edouard Friedrich Poeppig somewhere in Cuba. The name Lippia asperifolia H.B.K. is based on a Bonpland collection from Cumana, Venezuela, deposited in the Bonpland Herbarium at the Muséum National d'Histoire Naturelle at Paris, but H.B.K. (1818) plainly say "Lippia asperifolia Rich." on page 265 of their work, giving as synonyms Zapania lantahoides Lam., Z. odorata Pers., and Verbena globiflora L'Hér. The type of Verbena lantanoides Willd. is Herb. Willdenow 11124, deposited in the herbarium of the Botanisches Museum at Berlin; that of Verbena globiflora L'Hér. is a specimen collected by Alexander Cruckshanks at Lima, Peru. The type of Lippia balsamea was collected by Joannesa de Santa Barbara in Rio Grande do Sul, Brazil, in 1836, and is deposited in the herbarium of the Jardin Botanique de l'Etat at Brussels; that of L. citrata is Sieber s.n. from Pará, Brazil, sent by Graf Johann Canturius von Hoffmannsegg in 1830, deposited in the same herbarium; that of L. citrata var. triphylla was gathered by August Kappler (no. 1860) from cultivated plants in Surinam and is deposited in the herbarium of the Naturhistoriska Riksmuseum at Stockholm; that of Lantana mollissima is a specimen cultivated in the Jardin des Plantes and deposited in the Paris herbarium, a duplicate collected in 1825 deposited in the DeCandolle Herbarium at Geneva. The type of L. havanensis was collected by Jean Jules Linden (no. 72 bis) in the province of Havana, Cuba.

The type of Lippia geminata is a collection made by Friedrich Heinrich Alexander von Humboldt and Aimé Jacques Alexandre Bonpland at Rio Apure, Venezuela, deposited in the Bonpland Herbarium at Paris and there photographed by Macbride under his type photograph no. 39485; that of L. geminata var. microphylla was gathered by

Edouard Placide Duchassaing de Fontbressin on the island of Guadeloupe and is said to have been a shrub 1--2 feet tall, with small leaves 1.6 cm. long and 8 mm. wide, subequaling the peduncles, and violet-purple corollas. Lantana trifolia Sw. is based on Duss 4552, cultivated on Guadeloupe island and deposited in the Britton Herbarium at the New York Botanical Garden; Lippia glabriflora is based on Hassler 11112 in the United States National Herbarium.

The type of Lippia crenata was collected by Martin Sessé y Lacasta, José Mariano Mocino, Juan Diego del Castillo, and José Maldonado (no. 2215) somewhere in Mexico, deposited at Madrid; that of L. panamensis is Fendler 220 from Chagres, Panama, deposited at Leningrad; and that of Leonotis myrtifolia was collected by Charles Wright (no. 3157) in Cuba, deposited at Stockholm. Lorentz & Hieronymus 1174 is a cotype collection of L. globiflora ♀ geminata f. glabriuscula, while L. globiflora ♂ normalis f. lilacina is based on Otto Kuntze collections from (a) Concepcion, northern Paraguay, and (b) Matto Grosso, Brazil, July 1892, deposited in the Britton Herbarium.

It is worth noting here that the Lippia asperifolia of L. C. Richard, referred to in the synonymy above, belongs in the synonymy of L. javanica (Burm. f.) Spreng., that of Hochstetter belongs to L. baumii Gürke, and that of Benth and of Reichenbach belong to Phyla scaberrima (A. L. Juss.) Moldenke; the Lantana trifolia of Aiton, of Chamisso, and of H.B.K. belong in the synonymy of L. trifolia L., that of Briquet belongs to L. micrantha Briq., that of A. Chevalier belongs to L. mearnsii Moldenke, and that of Sessé & Mocino belongs to L. hispida H.B.K. Lippia geminata Schl. is a synonym of L. graveolens H.B.K., while L. geminata Millsp. is Lantana microcephala A. Rich. The L. crenata of (Griseb.) Kuntze and of Kuntze are L. junelliana (Moldenke) Troncoso, while that of Pearson is L. pretoriensis H. H. W. Pearson.

Baker (1883) states that his Lippia oligophylla is "allied to L. sessiliflora and L. geminata", but actually it is not even verbenaceous -- it is Acrocephalus villosus Benth. in the Lamiaceae.

Zapania scaberrima Pers. is included in the synonymy of what we now call Lippia alba by Sprengel (1825), Lippia dulcis Trev. is included by Steudel (1841), and Lantana lavandulacea is included by Schauer (1851) and others, but all of these binomials belong instead in the synonymy of Phyla scaberrima (A. L. Juss.) Moldenke. Pittier (1939) reduces Lippia organoides H.B.K. to synonymy under our plant, but it is a separate and distinct species. Boissier (1879) placed Lantana indica Roxb., L. dubia Royle, and L. collina Decne. in the synonymy of what he called Lantana alba Mill., but in my estimation Lantana indica is a distinct and valid species, with L. collina as a synonym, while L. dubia is a synonym of L. trifolia L.

The Lantana inermis, foliis oppositis, ovatis dentatis, floribus capitato-umbellatis, folioso-involucratis J. Burm. in Plum., Pl. Amer. 60 (1755) and Lantana inermis, foliis obpositis, ovatis J. Burm. in Plum., Pl. Amer. pl. 71, fig. 2 (1755) are sometimes cited as belonging to Lippia alba, but I regard them as belonging to the synonymy of Lantana jamaicensis Britton instead.

Verbena capensis Thunb., Lippia capensis (L.) Spreng., L. capensis Spreng., L. capensis (Thunb.) Spreng., and L. scabra Hochst. are often given in the synonymy of L. alba by various authors, but belong definitely in the synonymy of L. javanica (Burm. f.) Spreng., being based on African material.

What is currently being called Lippia alba is apparently a very polymorphic taxon. Possibly it should be divided into two species or varieties, typified by the L. geminata H.B.K. and the L. globiflora (L'Hér.) Kuntze forms. If these were to be kept separate, then the name Lippia lantanoides Coult. would certainly belong in the synonymy of the former for which it was only a new name when published, while Zapania lantanoides Lam. would go to the synonymy of the latter for which it was also merely a new name when published. Schauer (1851) actually keeps the two apart and assigns to each the following synonymy: (1) L. geminata H.B.K. -- including Lantana lippoides Hook. & Arn., L. mollissima Desf., L. odorata Weigelt, Lippia asperifolia Poepp., L. citrata Cham., and Verbena lantanoides Willd. (2) L. asperifolia A. Rich. -- including Lantana lavandulacea Willd., Lippia capensis Spreng., L. scabra Hochst., Verbena globiflora L'Hér., Zapania globiflora Poir., Z. lantanoides Lam., Z. odorata Pers., and Z. odoratissima Scop. He says of L. geminata: "Planta habitu semper insignis, neque cum ulla alia confundenda. L. citrata et L. geminata omnino non differunt. Capitula plerumque solitaria, interdum, et quidem in una eadamque stirpe, geminata. Itaque nomen Kunthianum, minus quidem aptum sed antiquis restituendum videbatur. -- A L. asperifolia Rich. abhorret; toto habitu, foliis supra minime strigoso-scaberrimis sed mollibus et aetate demum scabridis, praecipue vero capitulis brevipedunculatis omnino alienis." For L. asperifolia his comments are "Rigoroso examine discrimin inter plantam Americanam et Africanam allud detegere non contigit, nisi quod in Africana bracteae essent magis acuminate, flores paullo maiores." Morren (1851) also keeps the two separate.

Briquet (1904) says [p. 251] "Nous partageons entièrement l'opinion de M. O. Kuntze que la distinction des L. geminata et L. asperifolia, telle que Schauer l'a admise dans le *Prodromus*....ne peut être maintenue. C'est avec raison que l'auteur a rétabli pour l'espèce collective la dénomination princeps [L. globiflora], conformément aux lois de la Nomencl. art. 57." Kuntze (1898), however, says "L. globiflora OK. (Verbena gl. L'Her. 1784 = Zapania odoratissima Scop. 1786 = Zap. lantanodes Lam. 1791 = Lippia asperifolia

Rich. 18.. = L. geminata HBK. 1817) ♂ normalis O. Ktze. Frutex pubescens minus ramosus foliis majoribus (—8 cm longis, —5 cm latis) pedunculis plerumque solitariis; f. lilacina O. Ktze. Matto-grosso. Paraguay. Hierzu auch L. citrata Cham. ♀ geminata O. Ktze. (HBK.) Frutex ramosior foliis duplo minoribus [p. 252] pedunculis saepius geminatis floribus albis vel lilacinis; f. glabriuscula O. Ktze. Caulibus foliisque glabriusculis. Argentina: Salta, Tucuman (L. & H.). ♂ lanceolata Gris. Foliis angustis (l: 4--6). f. incana O. Ktze. Folia utrinque incana. Argentina: Oran (Hieronymus). ♂ microphylla Gris. Folia minima 1--1 1/2 cm longa 5--8 mm lata. f. glabriuscula O. Ktze. Argentina: Catamarca (Lorentz & Hieronymus). Ich kann Lippia asperifolia, für die der ältere Name globiflora einzutreten hat, nicht von L. geminata unterscheiden; weder die Blüthenfarbe (albiflora, lilacina) noch die Behaarung (f. pubescens, glabriuscula, incana) dieser weitverbreiteten Art, noch der Habitus bietet einem Anhalt dazu. Je grösser, robuster und verzweigter der Strauch wird, um so kleiner pflegen die Blätter zu sein. Die grösstblättrigen Formen wachsen an Flussufern und feuchten Stellen, zeigen aber geringe Verzweigung (jüngere Exemplare?)."

Mocquerys 851 was determined by Troncoso as "Lippia alba (Mill.) N. E. Br. var.", apparently indicating an opinion that it does not represent the typical form of the species and deserves nomenclatural recognition. A notation on Hering s.n. in the Leiden herbarium says "Lantana canescens Kunth Spr. 2: 763; Lantana mollissima, breve pedunculata; affinis iconi Burm. Amer. tab. 71, f. 2, sed differt pedunculis petiolo aequalibus, nec longioribus."

The "Lippia asperifolia L. C. Rich." of Pulle, Enum. Pl. Surinam. 401 (1906) appears to be an error for L. asperifolia A. Rich.; the "Lantana sp.?" of Sessé & Mocino, based on their no. 2195, is plainly Lippia alba, but the "Lippia alba" cited by Lundell (1937) is Lippia graveolens H.B.K.

Lippia alba has been collected in woods, oak and secondary forests, chaparral, thickets, clearings and occupied clearings, marshes and swamps, sandy or swampy places in general, low ground and lagoons, fields and sunny or moist fields, hedgerows, open or waste places, wet or sandy campos, moist ground near riverbanks, moist meadows near the edges of lakes, and Hevea brasiliensis nurseries, along roadsides and highways, trails, old canals and streamsides, at the edge of woods and the margins of primeval woods, at the edge of and in palm hammocks, among shrubs on sandy riverbanks, on dunes and high sand bars, on shores and sandy shores, beaches and llanos, barrancas and dry barrancas, grassy stream barrancas, wooded river edges, riverbanks, and river ledges, sandy seashores, savannas and wastelands, stony banks and saline plains, rocky barrancas and very dry savannas, as well as on road shoulders in the full open sun, at altitudes from sea-level to 2500 meters. It has been found growing in clay or wet alluvial clay soil, clay-

loam or moist loam, dry or dry sandy soil, dry exposed soil, deep loose or wet sand, dry alluvial gravel, and dry periodically inundated soil, blooming in every month of the year and fruiting from February to December.

Box, in his manuscript Flora of Antigua, says "Known to me by a few plants growing by an old estate pond at Coconut Hill, in the driest part of the limestone region. Evidently very rare and local." Schipp describes the species as a rare shrub in secondary forests in British Honduras, growing to 4 feet in height, with a stem diameter of half an inch, pendulous branches, and heliotrope-colored flowers. Standley (1938) reports it from "Thickets of the Pacific tierra caliente, ascending to the region of San José; Guanacaste; sometimes cultivated, probably for medicinal purposes. Widely distributed in tropical America.....The plant finds various uses in domestic medicine" in Costa Rica. Pittier refers to it as "gregarious on river flats" in Venezuela. Runyon says of it "frequent in semi-moist situations, sand-loam" in Texas and "occasional on the banks of the Rio Grande and the resacas." Cory reports it "infrequent on banks of river" in the same state. T. Meyer found it frequent on the high campos in the Chaco.

Parodi (1934) says "Arbusto de hojas caducas, originario del Brasil, Uruguay, Paraguay y Noreste argentino hasta la región platense. Se lo cultiva para adorno, propagándose muy fácilmente por estacas y división de matas." Rosengurtt (1949) describes it as "sufrúltice recostada entre arbustos de bosques ribereños; poco frecuente" in Uruguay. In Cuba it is described by Roig y Mesa (1945) "Es una mata no muy común que se le encuentra principalmente cultivada en patios y jardines. Crece además en las otras Antillas Mayores, en algunas de las Antillas Menores, en las Bahamas y en la América tropical continental."

In Texas it is said to grow in woods and semi-moist situations on the banks of rivers and resacas, blooming from March to October, on the Rio Grande plains and coastal prairies of the southern part of the state from Zapata to Cameron and northeast to Wharton Counties. It has been widely confused there with the Florida and West Indian Lantana involucrata L., which is not known from Texas. Small (1933) and Cory (1937) record Lantana involucrata from the state, probably on the basis of these misidentifications.

Pedersen says of it "fairly common in sunny pastures, seems to prefer sandy soil with subsoil of 'greda'.....common in deep loose sand" in Corrientes, Argentina. Standley & Padilla found it to be "common" in El Salvador; King avers it to be locally abundant in Tamaulipas. Lombardo (1954) states "Se le encuentra en algunos alambrados y tejidos viviendo en estado espontáneo y subespontáneo" in Montevideo. The Brittons found it "established after cultivation" on the island of Trinidad. Duss says "planted about all the houses [on Martinique] and common in gardens." León reports that it is "usually in gardens [in Cuba], may be introduced." Le Cointe (1934, 1947) speaks of a Lippia species commonly cultivated in the city of São Paulo -- this probably is L. alba. Pittier states that the plant is "pungently aromatic", but exactly what he means by this is

not clear since all other authors describe the odor of the plant as quite pleasant. Nair & Rehman (1962) give palynograms of the species and cite their slide no. 309, not seen by me.

It should be pointed out here that the very large-leaved type of this species is well represented by Cory 28309; the almost glabrous-leaved form by Poeppig 2614; the heavy "globiflora" form by Arechavaleta s.n. [Pocitos, Buceo, & vic. of Montevideo], Herb. Osten 3753, Montes 990 [which certainly looks as though it is a distinct taxon!], H. H. Rusby 704, Sellow s.n. [Brasilia], and O. E. White 905; the long-acuminate bractlet type by Buchtien 1458, Dusén 14170, Kuntze s.n. [VII.92], and Miers 1206; and the small-leaved northern form by Herb. Osten 16469 & 17309 and Schröder s.n. [Colonia, Jan. 30, 1922] & s.n. [Paysandú, Dec. 1924]. Herter 747, Herb. Herter 82833, and Pflanz 2093 are anomalous.

In the event that horticulturists should eventually wish to separate color forms of this species, the following specimens are described by their respective collectors as having had corollas of the following colors: "blue" — Soeprato 138, Tresling 156; "white, blue, and yellow" — Dodson & Thien 1281; "mauve" — Britton, Britton, & Brown 6070; "heliotrope" — Schipp 755; "violet" — Ferreyra 10113, R. E. Fries 1425, Fuertes 586, Lemoine 7844, Malme 768 & 2787, Pittier 13118; "light-violet" — Lanjouw 8, Versteeg 64; "light-violet with yellow throat" — Asplund 17605; "violet-purple" — Grisebach; "pale-purple" — Herb. Herter 82833, Herter 747; "light-purple" — Pedersen 1906, G. R. Proctor 9421; "purple" — Dodson & Thien 1260, Hinton 14024, T. Meyer 135, Raimondi 750, R. Runyon 898 & 2177, Standley & Padilla V.3230, Wonderly 52; "pink-purple" — Leonard & Leonard 15470, R. Runyon 2603; "light-pink" — Herzog 1429; "pinkish" — S. S. White 5679; "pink, yellow or yellowish within" — Rojas 1406 & 8326; "pinkish-blue" — Shaffer 2428; "pink" — Correll & Johnston 17926, Correll & Robbins 20956, R. S. Ferris 5927, Hinton 5720, 12844, 13149, 13585, & 13962, A. S. Hitchcock 20206, Howard 5471, Kappler 1860, Mexia 819, F. W. Pennell 4143, Ruiz Leal 14266, J. V. Santos 2533; "rose" — W. E. Broadway 99, Hassler 7367 & 7397, Herb. Osten 13562 & 20678, Jørgensen 2471, Koelz 22492, Macedo 3280, T. Rojas 1874, 1875, 12212, & s.n. [Concepcion, Dec. 1916], Rosengurtt B.4232, Ruiz Huidobro 2037, 2180, 3078, 3116, 3309, 3343, 3879, & 3888, Sagot 469, Schreiter s.n. [Embarcacion, Dec. 20, 1925], Wroth 59; "pale-rose" — Jørgensen 2471; "lilac-rose" — Rodrigo 952; "rose-lilac" — T. Rojas 12082; "rose, yellow inside" — Herb. Hicken 242, Herb. Osten 7534, T. Rojas 406, 495, 1874a, & s.n. [San Bernardino, June 1915]; "pale reddish-violet" — Ekman H.3514; "lilac" — Bailey & Bailey 1236, Britton, Britton, & Wilson 5492, W. Harris 11911, R. A. Howard 4855, Klug 1637, Macedo 2612, T. Meyer 10058, 10099, &

10404, Mexia 1929, Steyermark 35447; "light-lilac" -- Asplund 14375; "pale-lilac" -- Steyermark 50859; "purple-lilac, white inside, later yellow" -- Herb. Osten 19033, Herter s.n. [Nueva Pal-mira, April 1926]; "lavender" -- W. E. Broadway 346, Correll & Schweinfurth 15661, W. H. Cowgill 2073, Eyerdam & Beetle 22993, R. A. Howard 11718, R. M. King 4035, Koelz 2168, E. C. Leonard 8515, Leavenworth 200, Lundell & Lundell 8685, Plant Quarant. 050726, Trin. Bot. Gard. Herb. 8199; "lavender with a yellow eye" -- C. L. Lundell 10644; "lavender and white" -- Gilly & Hernandez Xolocotzi 253; "tube lavender, large lip purple, throat orange" -- Feddema 578; and "white" [perhaps worthy of a form name] -- Angulo 1325, Barbosa da Silva 2, W. Harris 11737, Irwin R.120, Maxon & Killip 1636, Raimondi 10576. It must always be remembered, however, in most cases where color variation is given on the basis of various collectors' reports, many of these apparent variations may be due only to differences in interpretation of the same color by different collectors or even to defects or imperfections in their color-vision.

Common and vernacular names for this plant are very numerous, including "ajejo cimarron", "alfombrilla", "alfrombrilla", "alfronbrilla", "anís de España", "anís del España", "beukes bosjie", "blakka tiki ment", "bushy lippia", "cariaquito", "cedrilha", "cidra", "cidraero", "cidreira", "cidrera", "cidrilha", "cidrilhi", "cidrilla", "erva cidreira", "erva cidreira do campo", "frutilla de perro", "graveelkruidje", "herva cidreira", "herva cidreira do campo", "herva-cidreira do campo", "hierba buena", "hierba del negro", "hierba negra", "hinojo de anís", "juanilama", "leppie rude", "lippie rude", "malmequer do mato", "malva", "malva thee", "mastranco", "mastranto", "mastranza", "melissa", "menta americana", "mint", "mirto", "murtinha italiana", "oregano", "orégano", "orégano de burro", "orozuz de la tierra", "palisado", "pampa oregano", "pampa orégano", "pamporegano", "pan poregano", "piépié pau", "poleo", "poley", "prontopalivio", "quita dolor", "quitadolor", "romero", "round-headed vervain", "Saint Mario", "salsa limão", "salva", "salva do Brasil", "salvia", "salvia americana", "salvia betónica", "salvia colorado", "salvia comun", "salvia del Brasil", "salvia-limão", "salvia morada", "salvia trepadora", "Santa Maria", "sauce limón", "sauge", "sauge du Brésil", "sideraea", "sidraera", "sidreira", "solvale thee", "sonora", "sonora lila", "St. Mario", "tarete", "te", "te castillans", "té de Castilla", "té de Castillo", "té del pais", "te del país", "te de playa", "toronjil", "toronjil americano", "toronjil de España", "toronjil isleño", "toronjil mentol", "wild mint", "yerba buena americana", "yerbabuena aromática matorral flor morada", "yerba buena cimaron", "yerbabuena cimarrona", "yerba cidreira", "yerba cidrera", and "yuanilama". The name "poleo" is also applied to L. affinis Schau., L. grisebachiana Moldenke, L. integrifolia (Griseb.) Hieron., L. turbinata Griseb. and its varieties, and Mentha pulegium L., while "romero" is ap-

plied also to Baccharis rosmarinifolia Hook. & Arn. and to Senecio rosmarinus Phil.

Johnson reports that L. alba is an aromatic sudorific used by the natives of Campeche in an infusion called a tea, "palisado", by them; Hinton reports that a brew is made from the very fragrant leaves in Mexico and used to treat stomach-ache. Asenjo 30 was actually purchased on the drug market in Puerto Rico. Hocking (1955) refers to the species as a diaphoretic, antispasmodic, emmenagogue, and stomachic. Biolley refers to it as a "medicinal plant" in Costa Rica, while Steyermark says that it is reported to be effective in the treatment of coughs in Guatemala. On the island of Martinique it is "used as a pectoral and sudorific" according to Duss. Its leaves are used for tea in Colombia, according to Proctor. Lados says of it "planta aromatica, estomacal, emenagoga, e anti-espasmodica" in Brazil, and Le Cointe (1945) makes the identical statement, adding "pectorale". Henz also refers to it as "medicinal" in Brazil, while Barbosa da Silva reports that a tea of the leaves is taken in the same country to counteract the effects of purgatives. It is "medicinal" in Argentina, according to Wroth & Morel. In Surinam, according to Lanjouw, the herbage is used for bathing in the treatment of fevers.

Roig (1945) says "En Camagüey la llaman Quita dolor y la toman en cocimiento contra los dolores de estómago. Con el mismo fin lo venden en el mercado de Santiago de Cuba con el nombre de Menta americana. En San Antonio de los Baños lo llaman Hinojo de anís y lo usan en infusión contra los cólicos hepáticos. En otros lugares de la provincia de la Habana la llaman poleo y la usan como pectoral. En Puerto Rico también la llaman Poleo. Según Standley la planta tiene propiedades sudoríferas, anti-espasmódicas, estomáquica y emenagoga. La infusión alcohólica se aplica en fricciones contra los resfriados. Grosourdy con el nombre Salvia del Brasil, dice que esta planta tiene las propiedades estimulantes de la Salvia de Europa y se usa en los mismos casos a la dosis de un manojo de la planta en una botella de agua hirviendo; tomando por tazas la infusión endulzada en el término del día." In his 1949 work he says that it is used as an anti-dysenteric in Cuba and South America; in his 1953 work he comments "usada como medicinal. En la parte Sur de Camagüey se le encuentra en antiguos bateyes. Su cocimiento se usa contra los dolores de estómaga."

It should be mentioned here that the illustration labeled "Lippia asperifolia" by Briquet in Engler & Prantl, Nat. Pflanzenfam. 4 (3a): 150, fig. 58 C & D (1895) appears to represent L. javanica. The H.B.K., Nov. Gen. & Sp. Pl. 2: 266 (1818) reference cited in the bibliography above is often misdated "1817"; the reference "Humb. & Kunth, Nov. Gen. 2: 214" occurring in literature has not been located by me, nor have I been able to trace "Lam. Ill. 2: 140"; L'Hér., Stirp. Nov. 1: 23, pl. 12 (1786) is often misdated "1784" or "1785"; Marthe, Cat. Pl. Jard. Méd. Paris 67

(1801) is often referred to as "Rich. Cat. Hort. Med. Paris 67"; Coul., Contrib. U. S. Nat. Herb. 2: 328-329 (1892) is sometimes erroneously cited as "1891" or "1894"; Ragonese, Darwiniana 5: 413 (1941) is sometimes referred to as "Ragonese, Santa Fe 413"; Lorentz, Veg. Nordeste Prov. Entre Ríos is often cited as "Lorentz, Entre Ríos"; T. Herzog, Meded. Rijksherbar. Leiden 29: 44 (1916) is often cited as "Herzog, Bolivia III (1916) 44"; Gleason, Bull. Torrey Bot. Club 58: 463 (1931) is sometimes referred to as "Gleason, Tyler-Duida (1931) 463"; Hook., Bot. Misc. 1: 171-172 (1829) is often misdated "1830"; and the J. K. Small, Fl. Southeast. U. S., ed. 1, 1012 (1903) and ed. 2, 1012 (1913) references are often incorrectly cited as page "1014".

Material of Lippia alba has been misidentified and distributed in herbaria by various workers under the names Aloisia citriodora Ort., Aloisia sp., Goniostachyum graveolens (H.B.K.) Small, Lantana canescens Kunth, L. canescens H.B.K., L. chamissonis D. Dietr., L. citrosa (Small) Moldenke, L. indica Roxb., L. involucrata L., L. lilacina Desf., L. odorata L., L. odorata Sessé & Moc., L. origanoides H.B.K., L. originoides H.B.K., L. recta Ait., L. reticulata Pers., L. sellowiana Link & Otto, L. trifolia L., L. velutina Mart. & Gal., Lantana sp., Lippia balansae Briq., L. berlandieri Schau., L. javanica Spreng., L. origanoides H.B.K., L. stoechadifolia Kunth, L. wrightii A. Gray, Verbena sp., and even Bacopa aquatica Aubl., Hyptis stricta Hoffm., Mikania hasslerana f. cuneifolia Hassler, and Waltheria americana L.

On the other hand, the Weberbauer 6346, distributed as this species, is actually L. americana f. hyptoides (Benth.) Moldenke; Venturi 36 is L. asperima Cham.; C. F. Baker 206 & 660, Brenes 17509, and Garnier 264 & 601 are L. cardiostegia Benth.; R. E. Fries 1445 is the type collection of L. chacensis Moldenke; Aguilar Hidalgo 40, M. E. Jones 29186, Millspaugh 41, Parks & Cory 19425, Small & Wherry 11921, Tharp 5904, and Vogd s.n. [Pharr, June 18, 1947] are L. graveolens H.B.K.; Tamayo 326 is L. origanoides H.B.K.; M. E. Jones 23231 is L. palmeri S. Wats.; Archer 4667, Herb. Inst. Miguel Lillo 32056, Pedersen 1163, and Rodriguez 234 are L. recolletae Morong; Venturi 354 & 1789 are L. suffruticosa (Griseb.) Kuntze; Lorentz & Hieronymus 236 & 373, Jørgensen 1024, and Werdermann 474 are L. turbinata Griseb.; Ballesti 37 and Herb. Inst. Miguel Lillo 32219 are Lantana aristata var. angustifolia (Kuntze) Moldenke; Archer 227 and Pittier 1289 are L. boyacana Moldenke; Killip & Smith 16399, Miller & Johnston 94, Pittier 7029, 10285, & 11061, E. Reed 540, and Rose & Rose 21724 are L. canescens H.B.K.; Pittier 6172 is L. fucata Lindl.; Acle & Guerrero 145, Cantu, Covell, & McCart 45, Cory 51332, H. C. Hanson 346, M. E. Jones 29186, Martinez & Trevino 29 & 43, McCart

7395 & 7460, and Tharp 5904 are all L. macropoda Torr.; Gaumer & sons 478 is L. microcephala A. Rich.; Miers 85 is Phyla nodiflora var. rosea (D. Don) Moldenke; and Killip 11616 is Hyptis lacustris St.-Hil.

The W. H. Cowgill 2073, cited below, cultivated in Maryland, was raised from seeds of Koelz 2168 from Dacca, Bengal, India.

Range (1935) cites his no. 332; Box cites his no. 1570 from Antigua; Ragonese (1941) cites his no. 2137 from Santa Fé, Argentina; Calderón & Standley cite this species from Santa Tecla, El Salvador. Matuda (1950) cites his nos. 1478, 5213, and 16645 from Mexico, and Rosengurtt (1949) his B.4232 from Uruguay. Hodge (1947) cites Archer 227, Giraldo s.n., and Toro 315 from Colombia. Raimondi (1943) cites the following: PERU: Cajamarca: Raimondi 3644. Lambayeque: Raimondi 750. Lima: Raimondi 10576 & 11879. Loreto: Raimondi 2174. Province undetermined: Raimondi 1287, 2175, 9890, & 11222.

Augusto (1946) cites: BRAZIL: Paraná: Pio Corrêa s.n. Rio Grande do Sul: Augusto s.n. [Pelotas, cercas]; Augusto & Edésio s.n. [Morro da Polícia]; João de S. Bárbara s.n. [Perto de Porto Alegre]; Emrich s.n. [Montserrat, margem do Guaiiba, Tristeza, Pedra Redonda]; Kadletz s.n. [Rio Grande do Sul]; Sellow s.n. [Perto de Porto Alegre]. URUGUAY: Herter s.n. [Artigas].

Glaziou (1911) cites his nos. 11330, 11331, 14154, 14159, and 21899a from Minas Gerais, Brazil, all as L. geminata except no. 14154 which he identifies as L. asperifolia.

Schauer (1851) cites cultivated specimens from Paris as authentic material of Lantana mollissima Desf. and of Lippia asperifolia A. Rich., deposited in the DeCandolle Herbarium at Geneva; Herb. Willdenow 11512 & 11611 as authentic material of Lantana lavandulacea Willd. and Lippia citrata Cham., respectively, in the Willdenow Herbarium at Berlin; Weigelt s.n. from Surinam; Berlandier 2306 from Mexico; and Poeppig s.n. from Cuba. Also, under L. geminata, he cites Bacle s.n. from Buenos Aires; Joannes de Santa Bárbara s.n., Sellow s.n., & Gardner s.n. from Rio Grande do Sul; Riedel s.n. from São Paulo; Martius s.n. from Bahia; Martius s.n., Pohl s.n., Riedel s.n., and Sieber s.n. from "secundum flumen Amazonum"; Kegel s.n., Perrottet s.n., Schomburgk s.n., and Weigelt s.n. from "in omni Guiana"; Humboldt & Bonpland s.n. from Venezuela; Dombey s.n. from Peru; Berlandier s.n. from "in oris maritimis", Mexico; Poeppig s.n. from Cuba; and Bertero s.n. from Puerto Rico. Under L. asperifolia he cites Gillies s.n. from Córdoba, Martius s.n. from Minas Gerais, Leblond s.n. from British Guiana, Humboldt & Bonpland s.n. from Venezuela, and several African collections.

The E. P. Johnson 50 & s.n., cited below from Tabasco, could as

well have been from Yucatán -- their labels read "Yucatan & Tabasco"; S. Watson 387b, cited below from Chiquimula, is labeled "Eastern portion of Verapaz and Chiquimula"; Commerson s.n., cited from Buenos Aires, Argentina, is actually labeled "Buenos Ayres et Montevideo"; and Langlassé 168, cited by me from Michoacán, Mexico, may actually have been collected in Guerrero, since its label is inscribed merely "Orilla".

In all, 788 herbarium specimens, including types or phototypes of many of the names involved, and 22 mounted photographs and illustrations have been examined by me.

Citations: TEXAS: Cameron Co.: Bogusch & Molby 4193 (Ur); Clover 397 (Mi), 962 (Mi); Correll & Johnston 17926 (Rf); Correll & Robbins 20956 (Ld); Cory 28309 (N), 51445 (Sm); A. M. Davis s.n. [Palm Grove, Sept. '41] (Au); G. L. Fisher 41011 (Ew, Gg-316087), s.n. [Brownsville, Aug. 16, 1924] (Hp), s.n. [Apr. 20, 1941] (Au, Au); H. C. Hanson 434 (G); Herb. Univ. Texas s.n. [Brownsville, 1907] (Au, Au); C. L. Lundell 10644 (N, Rf); Lundell & Lundell 8685 (G, Ld, Mi, Mi, N); Nealley 113 (C, Up-17038); Perkins & Hall 2618 (It); R. Runyon 228 (Au, Au, Au, N, S), 898 [2177] (Rr), 2603 (N), 4361 (Br, N, Ug), s.n. [Brownsville, 1930] (Hp); Schott 46 (T); Tharp 1847 (Au, Au); York s.n. [Brownsville, 3-19-1907] (Au, Au). Hidalgo Co.: Clover 907 (N), 1134 (Mi, N); Correll & Schweinfurth 15661 (Rf); Cory 17 (G), 36095 (G), 36288 (N, N); G. L. Fisher 41096 (W-2261497); A. R. Moldenke 186 (Fg); M. L. Walker 34 (Au). Wharton Co.: J. K. Small s.n. [near Wharton, April 1925] (G); Small & Wherry 11825 (N). Willacy Co.: M. C. Johnston 53253.30 (St). Zapata Co.: Clover 962 (N). County undetermined: Havard s.n. [Sept. 1884] (Mi). MEXICO: Campeche: Houstoun s.n. [Bailey Herb. neg. no. 5057] (N--photo of type). Chiapas: Breedlove 6192 (Z); Matuda 5213 (Ld); Nakamura 1478 (Mh, N). Colima: Edw. Palmer 1303 (G, N). Guanajuato: Collector undesignated 148 (Q). Guerrero: Hinton 5720 (N, Rf), 9242 (K, N, N, Rf), 14024 (G, Mi, N, N, Rf); N. L. H. Krauss 361 (Mm). Jalisco: Bárcena 225 (Me), 544 (Me); Diquet s.n. [Chapala] (N); Galeotti 788 (Br); E. W. Nelson 4142 (G), 6520 (G, N); Edw. Palmer 33 (C, Ca-192610, G, Pa, Sg-16083), 686 (C, G, Me, Me, Pa); Pringle 11085 (Cm, G, It, Me, Me, Me, Me, N, Vt), s.n. [26 July 1893] (Me). México: Hinton 1162 (G, N, N), 1812 (G, N, N), 4101 (N, N); Mrs. D. H. Sheldon s.n. [winter of 1872-3] (G). Michoacán: Hinton 12844 (Du-345854, La, Mi, N, Oa-6687), 13149 (G, Mi, N, N, Rf, S), 13585 (G, N, N, Rf), 13962 (Au, G, N, N, Rf); Langlassé 168 (Cb, G). Nayarit: Feddema 578 (Mi); R. S. Ferris 5927 (Du-185341); M. E. Jones 23230 (Ca-400878, Gg-172662), 23563 (Po-153921); Mexia 819 (G, G, Gg-155849, N), 1929 (Du-195494, G, G, Gg-157098, La, Mi, N). Oaxaca: Conzatti 579 (G); Ghiesbrecht s.

n. [Oaxaca] (Ca--322965). San Luis Potosí: V. H. Chase 7482 (G, Ur); Crutchfield & Johnston 5135 (Au--177650); N. L. H. Krauss 273 (Z); W. C. Leavenworth 200 (Ur); Purpus 5289 (Ca--157335, G, N). Sinaloa: J. Gonzalez Ortega 5650 (Me); Rose, Standley, & Russell 14124 (N). Tabasco: Gilly & Hernández Xolocotzi 253 (Au--123195, Mi, N); E. P. Johnson 50 (C), s.n. (C). Tamaulipas: Berlandier 72 (V), 874 (G, N), 2304 (Du--166557, G, M, T); R. M. King 4035 (N); Edw. Palmer 102 (G, Gg--31156, N); Pringle 1960 (Br, C, Ca--104919, G, Io--38721, Me, Me, Me, Mi, Pa, S, Vt), s.n. [8 Aug. 1888] (Ob--50727). Vera Cruz: Ervendberg 112 (G), 162, in part (Cb); Medellin 5 (Me); J. V. Santos 2533 (Mi). State undetermined: M. E. Jones 663 [Armeria] (Po--69159); Sessé, Mocifio, Castillo, & Maldonado 2195 (Q), 2196 (Q), 2210 (Q, Q, Q), 2215 (N--photo, Q, S--photo, Z--photo), 2216 (Q), 2221 (Q), 2572 (Q). GUATEMALA: Chi-
quimula: S. Watson 387b (G). El Petén: C. L. Lundell 4232 (La). Escuintla: J. D. Smith 2062 (C, G). Huehuetenango: Steyermark 50859 (N). Suchitepéquez: Steyermark 35447 (F--1058716). Zacapa: H. H. Bartlett 360 (N); C. C. Deam 360 (G, Mi), 6261 (Ca--201428, G, Mi, N). BRITISH HONDURAS: C. L. Lundell 1819 (Au, Au, F--685351, Mi), 4188 (F--689439, Me, Mi, S), 4232 (F--689453, Mi); Peck 798 (G, N); Schipp 755 (Ca--465288, F--712290, G, G, Mi, N, S). EL SALVADOR: La Libertad: Calderón 1507 (G). Santa Ana: Standley & Padilla V.3230 (N). NICARAGUA: Chinandega: E. Wall s.n. [Corinto, 15/4/28] (Ew). Managua: A. Garnier 308 (N). Department undetermined: Lévy 261 (Cb, Cb); C. Wright s.n. [1853-6] (G). COSTA RICA: Alajuela: Brenes 14320 (G), 21694 (N), s.n. (N). Guanacaste: H. Pittier 2869 (Br, Br); Tonduz s.n. [H. Pittier 13627] (G). San José: Biolley 987 (Br); H. Pittier 344 (Br); M. Valerio 37 (Br). PANAMA: Canal Zone: H. Pittier 3329 (G). Colón: Fendler 220 (Z--photo). CUBA: Havana: León 7530 (Ha, N). Las Villas: Britton, Britton, & Wilson 5492 (N); Ekman 16988 (S), 18893 (N, S); R. A. Howard 4855 (N, N), 5471 (N); J. G. Jack 8407 (N). Matanzas: A-
lain 3949 (Ha, Hk). Oriente: Acuña & Diaz Barreto 17367 (Es); Carabia 3613 (Ha); Ekman 15784 (S); Herb. Martius s.n. [Macuriges, Apr. 1824] (Br); Hioram 4882 (N), 6724 (Ha); León 11674 (Ha, N, N), 11917 (N), 16740 (Ha, N); Victorin 21414 (Ha). Pinar del Río: León 19725 (N); León & Alain 22855 (N); León, Moldenke, Acuña, & Alain 23404 (N); León, Victorin, & Alain 19725 (Ha). Province undetermined: C. Wright 440 [1860--64; Herb. Sauvalle 1756], in part (Hv), 3157 (S), 3159 [Herb. Sauvalle 1755] (Hv, N, Pa). JAMAICA: N. L. Britton 3917 (N); W. Harris 11737 (N), 11911 (Gg--31164, N, S); Harris & Britton 10593 (N); Maxon & Killip 1636 (Ur); G. R. Proctor 9421 (N); Stearn 675 (Bm). HISPANIOLA: Dominican

Republic: Fuertes 586 (N, S). Haiti: Ekman H.3514 (S), H.8282 (S); Leonard & Leonard 14431 (Ca-439879). PUERTO RICO: Asenjo 30 (As); Barrus 78 (It); Blauner 175 (Cb), s.n. [1852-53] (M); Britton, Britton, & Brown 6070 (N); Eggers 864 (Br); Sintenis 786 (S); J. A. Stevenson 3242 (N); Vélez 1114 (N). VIEQUES: Shafer 2428 (Gg-31163, N). LEEWARD ISLANDS: Antigua: Box 1570 (Ca-938837); Duss 23 (N). Guadeloupe: Duss 3281 (N, N), 4552, in part (N). WINDWARD ISLANDS: Grenada: W. E. Broadway 1825 (N). Martinique: Duss 416 (N, N), 4552 (N); R. A. Howard 11718 (N, N). TRINIDAD: Britton & Britton 2197 (N, W-1069300); W. E. Broadway s.n. [Trin. Bot. Gard. Herb. 8199] (R), s.n. [Trin. Bot. Gard. Herb. 8533] (R), s.n. [September 25, 1932] (I, I); Crüger s.n. [Trin. Bot. Gard. Herb. 2413, in part] (R). MARGARITA ISLAND: J. R. Johnston 81 (Ca-146677, N, W-531920); Miller & Johnston 125 (N, W-417629). PROVIDENCIA ISLAND: Proctor 3469 (W-1979286). WEST INDIES: Island undetermined: Swartz s.n. (S). COLOMBIA: Amazonas: R. E. Schultes 8198 (W-1996275); Schultes & Black 46-144a (W-1995679). Antioquia: Gallego s.n. [Julio 1946] (Fn, N); Giraldo s.n. [Oct. 1945] (Fn-3023); Tomas 955 (N); Toro Toro 315 (Fn-1646, N). Atlántico: Araque Molina & Barkley 19At082 (N, N); Elias 799 (W-1443114). Bolívar: Heriberto 146 (W-1036911); F. W. Pennell 4143 (W-1043881). Caquetá: Klug 1637 (N, S). Magdalena: Pérez Arbeláez 5164 (W-1693848). Putumayo: Klug 1637 (W-1517962). VENEZUELA: Angostura: Bailey & Bailey 1236 (Ba), 1236a (Ba). Apure: Chardon 22 (Ve), 23 (Ve); Humboldt & Bonpland s.n. [Macbride photos 39485] (Kr--photo, N--photo, N--photo). Aragua: Vogl 1538 (N). Bolívar: Holt & Gehriger 141 (N, Ve, W-1471858); F. W. Pennell 4143 (N); Tamayo 3430 (Ve, Ve). Delta Amacuro: Bond, Gillin, & Brown 166 (N, W-1189880). Falcón: Tamayo 729 (Ve-12755). Federal District: Boldingh 4129 (Ut-12855); Burkart 16013 (Ve). Lara: H. Pittier 13118 (N, Ve-12759, W-1440418); Saer 196 (Ve, W-1188507). Yaracuy: Burkart 16500 (Ve). Zulia: Mocquerys 851 (S, W-2282484, W-2383049). State undetermined: Mocquerys s.n. [Duaca] (W-2282483, W-2383051). BRITISH GUIANA: Irwin R.120 (Au-165428); Jenman 5450 (C, W-1322921), 5617 (C). SURINAM: Collector undesignated 1241 (Le); Collector undesignated Suriname 80 (Ut); Domburg s.n. [Tulleken 180] (Le); Focke 166 (Le), 321 (Ut); Herb. Acad. Rheno.-Trai. 123 (N); Herb. Coll. Pharmacy s.n. [Surinam] (Pa); Hering s.n. (Le); Hostmann s.n. (Le); Hostmann & Kappler 565 (S); Lanjouw 8 (Ut); Menge s.n. (Br); Pulle 45 (Ut); Soeprato 54 (Ut), 138 (Ut); Stahel 123 (Ut); Tresling 156 (Ut); Versteeg 64 (Ut, Ut), 258 (Ut), 290 (Ut); Weigelt s.n. [1827] (Br, Br, S), s.n. (Gt, Gt, Le); Wullschlägel 407 (Br). FRENCH GUIANA: W. E. Broadway 99 (N); Lemoine 7844 (N); Perrottet s.n. (Mi);

Sagot 469 (S, T). ECUADOR: Bolívar: F. L. Stevens 225 (Ur). Guayas: Asplund 17605 (S); Dodson & Thien 1260 (Ca), 1281 (E); Fagerlind & Wibom 138a (S), 138b (S); A. S. Hitchcock 20206 (N, W-1195201); Mille 799 (W-1573127). Los Ríos: Asplund 5520 (S); Harling 152 (S), 449 (S); S. S. White 5679 (Tl). PERU: Huánuco: Soukup 2231 (W-1876975). La Libertad: Née 107 (Q), 132 (Q). Lambayeque: Angulo 1325 (S). Lima: N. J. Andersson s.n. [Lima, 17 Mars 1852] (N, S, S); Barranca 30 (V); Ridoutt s.n. [Oct. 1939] (Ok); Wilkes s.n. [Lima] (W-72761). Loreto: Asplund 14375 (S, W-2224902); Tessmann 3082 (S); Ll. Williams 1559 (F-612695), 2340 (W-1495220), 4975 (F-624953, S). San Martín: Allard 20564 (W-1999787), 22176 (W-2025401); Ferreyra 10113 (Ss); Ll. Williams 5581 (F-623160), 7325 (F-624511), 7359 (F-623609, W-1498343). Department undetermined: J. T. Baldwin 4730 [Ramon Castilla] (Mi); Herb. U. S. Expl. Exped. [Wilkes] s.n. [Peru] (T). BRAZIL: Amazonas: Poeppig 2614 (V-212658, V, V). Bahia: A. Lutz 211 (Hk), 246 (Lz, Lz). Ceará: Drouet 2561 (I, Lb-24426, Mi, N, S, Sp-38349, Sp). Goiás: Macedo 2612 (N, S), 3280 (N), 3943 (S). Maranhão: Ozimo de Carvalho 6 (N, Sp-3462). Matto Grosso: F. C. Hoehne Com. Rondon 7 (Sp); Kuntze s.n. [Mato Grosso, VII.92] (N, N, W-701326); Malme 1880 (S), 1880a (N, S, W-1483440), 2787 (S), s.n. [on banks of Rio Cuyabá near Santo Antonio, July 12, 1903] (S, S). Minas Gerais: Heringer s.n. [Herb. Est. Exp. Café 378] (N, Sp-44564); Ule s.n. [Herb. Mus. Rio de Jan. 14900] (W-1199834). Pará: Archer 8266 (Be-12100, N); Black & Ledoux 50-10292 (Be-61583); Monteiro da Costa 43 (N); Sampaio s.n. [Herb. Rio Jan. 19923] (N); Schwacke 587 (Cb); Sieber s.n. [Pará, comm. Hoffmannsegg 1830] (Br, F-photo, N-photo, Si-photo, Z-photo); A. Silva 372 (W-2439066); Sioli 36 (Be-59457); Spruce 2 (W-1169302). Paraná: Dusén 8634 (S), 14170 (N, S, W-1481651); Hatschbach 3752 (Sm); Hatschbach & Pereira 7863 [Herb. Hatschbach 10478] (Lw); Nogiri 19 (Gg); Stellfeld 1253 [Herb. Mus. Paran. 2364] (N). Pernambuco: G. Gardner 1104 (Cb). Rio de Janeiro: Azevedo Marques s.n. [March 1915] (Je-735); M. Kuhlmann s.n. [Paráhyba do Sul, Dec. 2, 1934] (K, Sp-32170, Sp); Mello Barreto 1365 [Herb. Jard. Bot. Belo Horiz. 23266] (Ja-45896); Segadas-Vianna, Dau, Ormond, Machline, & Lorédo 594 (Ja). Rio Grande do Sul: Czermak & Reineck 340 (Cb); Henz 35351 (N); Joannesa de Santa Bárbara s.n. [Porto Alegre, 1835] (Br), s.n. [1836] (Br, F-photo, N-photo, Si-photo, Z-photo); Leite 660 (N); Malme 768 (S, S); Rambo 38012 (N), 49694 (N); Reitz C.359 (N); Sehnem 3872 (B). Rio Negro: G. H. H. Tate 130 (N). Santa Catarina: Lorentz s.n. [Concepcion del Uruguay] (B); Reitz & Klein 2387 (Gg). São Paulo: A. S. Costa Serra s.n. [Campinas, June 21, 1935] (K, Sp-33440, Sp);

J. T. Lima s.n. [Herb. Jard. Bot. Rio Jan. 48998] (N); Luederwald s.n. (N, Sp--20080); B. de Oliveira s.n. [Capital] (Sp--30276, Sp); Pereira 926 (N, Wh, Wh), s.n. [Capital, Jan. 13, 1942] (Sp--46292). State undetermined: Collector undesignated 183 (C); J. E. Pohl s.n. [Brasiliae, comm. Mus. Caes. Vindob. 1839] (Br, F--photo, N--photo, Si--photo, Z--photo), s.n. (Br); Sellow s.n. [Brasil] (Br, Vt); Ule s.n. (Ja--32325). BOLIVIA: El Beni: M. Cárdenas 3761 (S); Fleischmann 107 (S); H. H. Rusby 916 (C, Pa, Pr); Werdermann 2410 (E--999966, S). La Paz: Buchtien 1458 (W--1177996); H. H. Rusby 704 (Mi, W--1232237); O. E. White 905 (Mi, N, Pa, W--1232269). Santa Cruz: T. Herzog 1429 (S). Tarija: R. E. Fries 1425 (S); Pflanz 2093 (W--1234341). PARAGUAY: Hassler 960 (N, N), 7367 (Ca--944342, N, S), 7397 (Ca--944341, N, S), 11112 (Ca--930219, Go, N, S, W--1056911); Kuntze s.n. [Concepcion, Nord Paraguay] (N), s.n. [Concepcion] (N); Malme 902 (N, S, S); Edw. Palmer s.n. [Paraguay River] (W--41139); T. Rojas 406 [Herb. Osten 7898] (Ug), 495 [Herb. Hassler 495; Herb. Osten 8326] (Ug), 1406 [Herb. Osten 7898] (S), 1874 [Herb. Hort. Parag. 10060; Herb. Osten 13566] (N, Ug), 1874a [Herb. Hort. Parag. 10060a; Herb. Osten 13567] (Ug), 1875 [Herb. Hort. Parag. 10061; Herb. Osten 13563] (Ug), 1875a [Herb. Hort. Parag. 10065a; Herb. Osten 13564] (Ug), 8326 (Go), s.n. [San Bernardino, June 1915; Herb. Hicken 242; Herb. Osten 7534] (Ug), s.n. [Concepcion, Dec. 1916; Herb. Osten 13563] (S); Sandeman 4871 (K). ISLA DEL TORO: Grtner 1027 [Herb. Osten 23169] (Ug). URUGUAY: Arechavaleta 8 [Mercedes, Feb.] (Ug), 8 [Paso de los Toros, April] (Ug), 1132 (N), s.n. [Pocitos, Buceo, & vic. of Montevideo; Herb. Osten 3753] (Ug); Berro 86 (N); Cabrera 2581 (N, N, N); Castellanos s.n. [Punta Piedras, Nov. 10, 1946; Herb. Inst. Miguel Lillo 15761] (N), s.n. [Bella Unión, Jan. 28, 1948; Herb. Inst. Miguel Lillo 15044] (N); Chebataroff s.n. [dept. Rio Negro, Jan. 1939] (Ug--4736); Collector undesignated s.n. [Maldonado, 25 Dec. 1884] (Ug, Ug, Ug), s.n. (Ug--5705, Ug, Ug); Gibert 7 (Ug); Herter 10053 (N), 95310 (N); Herter 747 [Herb. Herter 82833] (B, Ca--323334, N, N, S, W--1344155), 747a [Herb. Herter 82658] (N), s.n. [Nueva Palmira, April 1926; Herb. Osten 19033] (Ug, Ug); King 147 (S); Lorentz 49 (B); Osorio s.n. [Bella Unión, Jan. 28, 1948] (N, Ug--13930); Rosengurtt B.950 (N), B.1959 (N), B.4232 (Ug--8278); Schröder s.n. [Colonia, Jan. 30, 1922; Herb. Osten 16469] (Ug), s.n. [Paysandú, Dec. 1924; Herb. Osten 17309] (Ug); Scolnik 36 (W--2045547); Teissene 1476 (Ug). ARGENTINA: Buenos Aires: N. J. Andersson s.n. [Buenos Ayres, 1852] (N, S); Commerson s.n. [Buenos Ayres et Montevideo] (N); Lefebre s.n. [Ensenada, 1891] (Br); Venturi 117 (S). Chaco: Jürgensen 2471 [Herb. Osten 11876] (Ug, W--1055179), s.n. [Herb. Mus. Argent. Ci-

enc. Nat. 23944] (N); T. Meyer 135 [Herb. Osten 22658] (Ug), 8790 (N, S); T. Rojas 12082 (S); A. G. Schulz 134 [Herb. Mus. Argent. Cienc. Nat. 6471] (N), 1500 (N), 1501 (N); C. L. Schulz 863 (N); Venturi 39 (W-1043612). Corrientes: Cabrera 11623 (W-2197996); Ibarrola 894 (W-1934140); Malme s.n. [Empredados, 5/1902] (S); Pedersen 1153 (N, W-2283036), 1906 (N, S, W-2283115); Ruiz Huidobro 2037 (Gg-406032, S), 2180 (S), 3879 (N), 3888 (N); Ruiz Leal 11266 (Ss); G. J. Schwarz 126 (Ca), 250 (Ca), 559 (Ca); Wroth 59 (S). Entre Ríos: T. Meyer 10058 (N), 10404 (N), 10580 (N); I. Morel 194 (N); Rodrigo 952 (N); F. A. Roig 1263 [Herb. Ruiz Leal 18362] (Sm); Scala 2003 (N, N, N, S, Ug), s.n. [4-XI-29] (La). Formosa: Eyerdam & Beetle 22993 (Ca-652424); I. Morel 194 (S), 690 (N, Ur), 1120 (N), 1314 (N), 1491 (N), 1636 (N); Pierotti 1087 (N); Reales 480 (N). Misiones: Ekman 2015 (N, S); Montes 990 (Ca); D. Rodriguez 616 (Ca-3490), 6161 [Herb. Inst. Miguel Lillo 32241] (N), s.n. [Herb. Mus. Argent. Cienc. Nat. 23771] (N). Salta: Schreiter s.n. [Embarcacion, Dec. 20, 1925; Herb. Osten 20678] (Ug). San Juan: Cuezzo 1127 (N). Santa Fé: R. Alvarez 909 (N); Job 650 (N, N), 748 (N, N); Ragonese s.n. [Herb. Mus. Argent. Cienc. Nat. 19776] (N); Ruiz Huidobro 3078 (N), 3116 (N), 3230 (N, S), 3292 (N), 3309 (N), 3343 (N), 3387 (N); Venturi s.n. [Herb. Mus. Argent. Cienc. Nat. 23767] (N). Tucumán: Lorentz & Hieronymus 1174 (N); E. Romero s.n. [28/1/945] (Ca); Venturi 4294 (N). Chica Island [Misiones]: Montes 990 (S). Laguna Oca Island [Formosa]: T. Rojas 12212 (S). Puentes Island [Entre Ríos]: T. Meyer 10099 (N). PAKISTAN: East Bengal: Koelz 10667 (Mi). INDIA: Assam: Chand 7692 (Mi); Hooker & Thomson 5 (S); Koelz 22492 (Mi). Khasi States: G. Mann s.n. [Khasia] (Bz-21774). AUSTRALIA: Queensland: Baron s.n. [Rockhampton] (Sg-16072). CULTIVATED: Argentina: Miers 1206 (W-1343921). Belgium: Crépin s.n. (Br). Brazil: Barbosa da Silva 2 (Be-13382, N, W-2439590); Coelho 2194 (Sf); Henz 35351 (S), s.n. [Rambo 35351] (N); Lados s.n. [Herb. Inst. Nac. Pesquis. Amaz. 1951] (Ok); Moldenke & Moldenke 19630 (Es, Lg, N); Sampaio 1486 (Ja-46752); Siqueira s.n. [Capital, Dec. 7, 1942] (Sp-47560); Tiberio de Moraes 1980 (Sf). Colombia: Cuatrecasas 22834 (F-1280034). Costa Rica: Tonduz 6723 (Br, Br, N). Cuba: Acuña 16063 (Es); Ekman 10314 (N, S); León 11917 (Ha); Marie-Victorin 21351 (Vi), 21114 (Vi); Moldenke & Moldenke 19884 (Es, Lg, N, Sm). Dominican Republic: Ekman H.15802 (N, S). England: Hort. Barclay s.n. [15-6-30] (C). France: Herb. Jewett s.n. [h. P.] (Mi). Germany: Lucae s.n. [Hort. bot. berol. 1844] (Br). Guadeloupe: Duss 4552, in part (N). Haiti: Ekman H.718 (S), H.9808 (S); E. C. Leonard 8515 (N). India: Herb. Hort. Bot. Calcuttensis s.n. (Bz-21668). Martinique: Duss 4765 (N).

Maryland: W. H. Cowgill 2073 [Koelz 2168; Plant Quarant. 050726] (Ba). Mexico: Wonderly 52 (Mi). Surinam: Kappler 1860 (Cp, Gt, S, Ut); Kegel 1240 (Gt). Texas: F. B. Jones 4128 (Fj). Tortue: Leonard & Leonard 15470 (N). Venezuela: Tamayo 1891 (Ve--12756). LOCALITY OF COLLECTION UNDETERMINED: Collector undesignated 85 (Q), 150 [Mastrante] (Q), s.n. (Q); Née 99 (Q), 118 (Q), 129 (Q); Tweedie s.n. [1837] (C). MOUNTED ILLUSTRATIONS: L'Héritier, Stirp. Nov. 1: pl. 12 (S); Pohl, Icon. Plant. Brasil. 302 (V--drawing).

LIPPIA ALBA var. **CARTERAE** Moldenke, Phytologia 7: 430. 1961.

Bibliography: Moldenke, Phytologia 7: 430. 1961; Moldenke, Résumé Suppl. 3: 9. 1962; Hocking, Excerpt. Bot. A.5: 44. 1962.

This variety differs from the typical form of the species in having clear-yellow corollas.

The type of the variety was collected by Annette Carter -- in whose honor it is named -- and Roxana Ferris (no. 3864) in the protection of other shrubs in the dry rocky bed of Arroyo Santo Domingo, bordered with Prosopis, Acacia brandegeana, Jatropha cinerea, Lophocereus schottii, Opuntia, and Bumelia, at Rancho El Horro, northeast of San Xavier, at an altitude of 435 meters, Sierra de la Giganta, southern Baja California, Mexico, at latitude $25^{\circ}53.25'$ N., longitude $111^{\circ}33'$ W., on March 17, 1960, and is deposited in the herbarium of the University of California at Berkeley. The collectors note that the plant is a shrub with a trunk 2-4 cm. in diameter, growing to 3 meters tall, with aromatic herbage, flowering in March, and called "salvia real" — except where protected by other shrubs all the plants are browsed by goats and cattle to within a few inches of the ground; used as a tea and also in the treatment of respiratory afflictions.

Only two herbarium specimens, including the type, have been examined by me.

Citations: MEXICO: Baja California: Carter & Ferris 3864 (Ca--199588--type, Z--isotype).

LIPPIA ALNIFOLIA Schau. in A. DC., Prodr. 11: 588. 1847.

Synonymy: Lippia alnifolia Mart. & Schau. ex Schau. in Mart., Fl. Bras. 9: 242. 1851. Lippia brasiliensis A. S. Müller ex Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 37 & 95, nom. nud. 1942. Lantana odora Mart. ex Moldenke, Résumé Suppl. 10: 5, in syn. 1964.

Bibliography: Schau. in A. DC., Prodr. 11: 588. 1847; Schau. in Mart., Fl. Bras. 9: 242. 1851; Jacks. in Hook. f. & Jacks., Ind. Kew. 2: 95. 1894; Briq. in Engl. & Prantl, Nat. Pflanzenfam. 4 (3a): 151. 1895; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 37 & 95. 1942; Moldenke, Alph. List Invalid Names 13. 1947; Moldenke, Bol. Soc. Venez. Cienc. Nat. 11: 46. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 80 & 189. 1949; Moldenke, Alph. List Cit. 3: 691, 712, & 754. 1949; Moldenke, Résumé 93, 311, & 460. 1959; Moldenke, Résumé Suppl. 10: 5. 1964.